

Test Results on the Performance of Approximation Algorithms for the Maximum Induced Planar Subgraph Problem

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Contents

1 Results	1
2 Results - Proportion of Vertices in Induced Planar Subgraph	3
2.1 Tests on Graphs Generated By Bollobás Method	3
2.2 Tests on Graphs Generated By Steger-Wormald Method	8
2.3 Tests on Graphs Generated by the Classical Method	16
3 Results - Size of Induced Planar Subgraph	24
3.1 Tests on Graphs Generated By Bollobás Method	24
3.2 Tests on Graphs Generated By Steger-Wormald Method	29
3.3 Tests on Graphs Generated by the Classical Method	44
4 Results - Time Taken to Produce Induced Planar Subgraph	59
4.1 Tests on Graphs Generated By Bollobás Method	59
4.2 Tests on Graphs Generated By Steger-Wormald Method	64
4.3 Tests on Graphs Generated by the Classical Method	79

1 Results

The following tables contain the results in terms of size of induced subgraph produced and running time taken by various algorithms for the Maximum Induced Planar Subgraph problem. In this document tables for the average proportion of vertices in the induced planar subgraph, the average size of induced planar subgraph and the average elapsed time taken are provided. The standard deviation is included in parenthesis for each average size (or time) given. Table 1 provides a list of abbreviations used for the algorithms in the tables listing results in the following sections. The algorithms were tested on d -regular graphs produced by Bollobás's method [2] and Steger and Wormald's algorithm [6]. They were also tested on graphs of expected average degree d produced by the classical method [1, p.143].

Table 1: Key to Abbreviations in Tables of Results

Abbreviation	Algorithm
IS	Maximal Independent Set
T	Maximal Induced Forest
HL	Halldórsson and Lau Algorithm [5]
OP1	Outerplanar Algorithm 1
OP2	Outerplanar Algorithm 2
PT	Palm Trees Algorithm
VA	Vertex Addition Algorithm [3]
VR	Vertex Removal Algorithm [4]
<i>VSR</i>	<i>Vertex Subset Removal Algorithm</i>
OP1+EPS	Outerplanar Algorithm 1 combined with enlarge planar subgraph operation
PT+EPS	Palm Tree Algorithm combined with enlarge planar subgraph operation
<i>VSR+EPS</i>	<i>Vertex Subset Removal Algorithm combined with enlarge planar subgraph operation</i>

Lines in **bold** type indicate algorithms designed by the author. Lines in *italics* indicate algorithms based on modifications of (or combinations that include) existing algorithms.

2 Results - Proportion of Vertices in Induced Planar Subgraph

2.1 Tests on Graphs Generated By Bollobás Method

Table 2: Average Size (as a proportion) of Maximum Induced Planar Subgraph on 3-regular graphs of size n produced by Bollobás algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.8750	0.8720	0.8780	0.7990	0.7990	0.7560	0.7000	0.7500	0.7690	0.7000	0.3730	0.5160
40	0.8340	0.8310	0.8330	0.7825	0.7825	0.7560	0.7235	0.7515	0.7645	0.7235	0.3740	0.5150
60	0.8180	0.8167	0.8140	0.7730	0.7730	0.7560	0.7317	0.7517	0.7607	0.7317	0.3720	0.5097
80	0.8025	0.8053	0.8027	0.7688	0.7688	0.7532	0.7332	0.7543	0.7588	0.7332	0.3708	0.5117
100	0.7950	0.7956	0.7972	0.7670	0.7670	0.7542	0.7358	0.7542	0.7568	0.7358	0.3742	0.5102
200	0.7796	0.7795	0.7793	0.7793	0.7793	0.7612	0.7381	0.7569	0.7524	0.7381	0.3745	0.5054
300	0.7737	0.7725	0.7734	0.7583	0.7583	0.7518	0.7387	0.7580	0.7510	0.7387	0.3775	0.5055
400	0.7686	0.7668	0.7681	0.7563	0.7563	0.7512	0.7383	0.7592	0.7506	0.7383	0.3744	0.5042
500	0.7668	0.7632	0.7658	0.7553	0.7553	0.7510	0.7391	0.7589	0.7500	0.7391	0.3738	0.5055
600	0.7644	0.7613	0.7636	0.7543	0.7543	0.7508	0.7398	0.7586	0.7498	0.7398	0.3730	0.5045
700	0.7637	0.7600	0.7623	0.7537	0.7537	0.7508	0.7396	0.7590	0.7489	0.7396	0.3735	0.5039
800	0.7633	0.7580	0.7620	0.7538	0.7538	0.7506	0.7395	0.7592	0.7493	0.7395	0.3748	0.5035
900	0.7626	0.7572	0.7607	0.7532	0.7532	0.7508	0.7394	0.7595	0.7493	0.7394	0.3753	0.5040
1000	0.7616	0.7563	0.7600	0.7526	0.7526	0.7507	0.7399	0.7591	0.7492	0.7399	0.3749	0.5035

Table 3: Average Size (as a proportion) of Maximum Induced Planar Subgraph on 4-regular graphs of size n produced by Bollobás algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.7660	0.7640	0.7580	0.7050	0.6870	0.6540	0.6140	0.6520	0.6750	0.6140	0.3290	0.5310
40	0.7250	0.7210	0.7270	0.6930	0.6825	0.6515	0.6295	0.6525	0.6620	0.6295	0.3300	0.5175
60	0.7117	0.7127	0.7130	0.6913	0.6757	0.6510	0.6367	0.6563	0.6597	0.6363	0.3340	0.5147
80	0.6992	0.6987	0.7020	0.6830	0.6715	0.6472	0.6405	0.6598	0.6593	0.6402	0.3312	0.5132
100	0.6936	0.6938	0.6992	0.6826	0.6714	0.6490	0.6404	0.6622	0.6610	0.6402	0.3338	0.5104
200	0.6798	0.6781	0.6850	0.6749	0.6633	0.6476	0.6438	0.6621	0.6568	0.6438	0.3328	0.5088
300	0.6730	0.6715	0.6796	0.6734	0.6613	0.6463	0.6442	0.6638	0.6560	0.6442	0.3341	0.5074
400	0.6709	0.6689	0.6781	0.6715	0.6597	0.6463	0.6458	0.6631	0.6551	0.6458	0.3326	0.5057
500	0.6684	0.6657	0.6758	0.6711	0.6576	0.6461	0.6454	0.6632	0.6540	0.6454	0.3339	0.5049
600	0.6680	0.6648	0.6745	0.6699	0.6586	0.6466	0.6465	0.6637	0.6552	0.6465	0.3352	0.5050
700	0.6670	0.6631	0.6742	0.6699	0.6576	0.6459	0.6472	0.6637	0.6541	0.6472	0.3330	0.5045
800	0.6664	0.6614	0.6731	0.6696	0.6573	0.6462	0.6459	0.6644	0.6536	0.6459	0.3339	0.5041
900	0.6655	0.6609	0.6727	0.6691	0.6568	0.6458	0.6464	0.6632	0.6542	0.6464	0.3333	0.5040

Table 4: Average Size (as a proportion) of Maximum Induced Planar Subgraph on 5-regular graphs of size n produced by Bollobás algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.6990	0.6960	0.6990	0.6340	0.6250	0.5780	0.5480	0.5840	0.6050	0.5440	0.2920	0.5160
40	0.6535	0.6540	0.6620	0.6265	0.6115	0.5720	0.5595	0.5885	0.5940	0.5585	0.2960	0.5140
60	0.6410	0.6407	0.6457	0.6247	0.6070	0.5753	0.5687	0.5910	0.5943	0.5683	0.2977	0.5113
80	0.6320	0.6330	0.6402	0.6240	0.6050	0.5757	0.5733	0.5915	0.5938	0.5733	0.2970	0.5100
100	0.6238	0.6232	0.6348	0.6176	0.6012	0.5762	0.5724	0.5900	0.5904	0.5722	0.2964	0.5100
200	0.6114	0.6116	0.6259	0.6153	0.5977	0.5747	0.5769	0.5951	0.5890	0.5768	0.3023	0.5089

Table 5: Average Size (as a proportion) of Maximum Induced Planar Subgraph on 6-regular graphs of size n produced by Bollobás algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.6350	0.6350	0.6370	0.5770	0.5690	0.5170	0.4930	0.5220	0.5430	0.4910	0.2610	0.3680
40	0.6010	0.5990	0.6070	0.5745	0.5605	0.5185	0.5070	0.5310	0.5405	0.5045	0.2650	0.3610
60	0.5870	0.5867	0.5937	0.5700	0.5543	0.5233	0.5180	0.5377	0.5403	0.5173	0.2750	0.3550
80	0.5787	0.5795	0.5902	0.5717	0.5520	0.5218	0.5237	0.5407	0.5435	0.5237	0.2697	0.3518

2.2 Tests on Graphs Generated By Steger-Wormald Method

Table 6: Average Size (as a proportion) of Maximum Induced Planar Subgraph on 3-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.8770	0.8740	0.8740	0.7930	0.7930	0.7540	0.7000	0.7510	0.7710	0.6990	0.3610	0.5130
40	0.8300	0.8330	0.8285	0.7790	0.7790	0.7545	0.7235	0.7520	0.7630	0.7230	0.3735	0.5170
60	0.8153	0.8133	0.8130	0.7767	0.7767	0.7540	0.7310	0.7523	0.7607	0.7310	0.3677	0.5137
80	0.8047	0.8033	0.8025	0.7735	0.7735	0.7530	0.7343	0.7535	0.7595	0.7340	0.3730	0.5112
100	0.7948	0.7948	0.7956	0.7688	0.7688	0.7526	0.7348	0.7552	0.7568	0.7348	0.3734	0.5102
200	0.7794	0.7789	0.7800	0.7610	0.7610	0.7519	0.7375	0.7575	0.7523	0.7375	0.3763	0.5071
300	0.7726	0.7711	0.7726	0.7577	0.7577	0.7514	0.7396	0.7573	0.7517	0.7394	0.3749	0.5049
400	0.7681	0.7671	0.7696	0.7565	0.7565	0.7510	0.7391	0.7584	0.7506	0.7391	0.3747	0.5048
500	0.7662	0.7633	0.7655	0.7554	0.7554	0.7509	0.7394	0.7586	0.7497	0.7394	0.3742	0.5043
600	0.7654	0.7613	0.7643	0.7546	0.7546	0.7510	0.7395	0.7589	0.7498	0.7395	0.3755	0.5040
700	0.7637	0.7597	0.7627	0.7539	0.7539	0.7506	0.7397	0.7588	0.7496	0.7397	0.3753	0.5035
800	0.7628	0.7586	0.7617	0.7533	0.7533	0.7505	0.7397	0.7591	0.7489	0.7397	0.3744	0.5037
900	0.7617	0.7570	0.7609	0.7531	0.7531	0.7505	0.7401	0.7588	0.7493	0.7401	0.3746	0.5030
1000	0.7617	0.7567	0.7596	0.7532	0.7532	0.7506	0.7401	0.7589	0.7487	0.7401	0.3749	0.5028
2000	0.7604	0.7517	0.7566	0.7517	0.7517	0.7504	0.7402	0.7593	0.7486	0.7402	0.3754	0.5024
3000	0.7599	0.7490	0.7549	0.7511	0.7511	0.7502	0.7401	0.7595	0.7486	0.7401	0.3731	0.5014
4000	0.7600	0.7480	0.7540	0.7508	0.7508	0.7502	0.7399	0.7598	0.7471	0.7399	0.3755	0.5013
5000	0.7597	0.7474	0.7534	0.7507	0.7507	0.7502	0.7403	0.7595	0.7477	0.7403	0.3755	0.5010
6000	0.7599	0.7468	0.7530	0.7506	0.7506	0.7501	0.7401	0.7597	0.7479	0.7401	0.3751	0.5012
7000	0.7596	0.7466	0.7527	0.7505	0.7505	0.7501	0.7403	0.7595	0.7477	0.7403	0.3750	0.5011
8000	0.7595	0.7458	0.7524	0.7506	0.7506	0.7501	0.7404	0.7595	0.7478	0.7404	0.3748	0.5010
9000	0.7597	0.7453	0.7522	0.7504	0.7504	0.7501	0.7402	0.7596	0.7468	0.7402	0.3752	0.5013
10000	0.7597	0.7454	0.7521	0.7504	0.7504	0.7501	0.7403	0.7596	0.7481	0.7403	0.3754	0.5010

Table 7: Average Size (as a proportion) of Maximum Induced Planar Subgraph on 4-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.7680	0.7690	0.7650	0.7090	0.6930	0.6610	0.6140	0.6530	0.6780	0.6130	0.3160	0.5160
40	0.7205	0.7245	0.7215	0.6910	0.6850	0.6515	0.6330	0.6585	0.6685	0.6300	0.3300	0.5170
60	0.7107	0.7077	0.7107	0.6860	0.6757	0.6513	0.6367	0.6613	0.6627	0.6363	0.3313	0.5127
80	0.7017	0.7007	0.7027	0.6838	0.6695	0.6468	0.6415	0.6610	0.6598	0.6410	0.3297	0.5148
100	0.6922	0.6918	0.6962	0.6806	0.6668	0.6476	0.6414	0.6596	0.6580	0.6414	0.3314	0.5116
200	0.6795	0.6794	0.6844	0.6747	0.6631	0.6465	0.6447	0.6632	0.6562	0.6447	0.3299	0.5085
300	0.6732	0.6720	0.6799	0.6725	0.6596	0.6468	0.6456	0.6622	0.6550	0.6456	0.3326	0.5068
400	0.6708	0.6684	0.6776	0.6714	0.6594	0.6467	0.6452	0.6633	0.6539	0.6452	0.3340	0.5058
500	0.6686	0.6660	0.6758	0.6705	0.6578	0.6465	0.6456	0.6632	0.6540	0.6455	0.3308	0.5054
600	0.6672	0.6640	0.6745	0.6701	0.6569	0.6462	0.6462	0.6632	0.6536	0.6462	0.3325	0.5049
700	0.6668	0.6633	0.6744	0.6701	0.6571	0.6454	0.6465	0.6633	0.6541	0.6465	0.3319	0.5044
800	0.6665	0.6620	0.6731	0.6696	0.6571	0.6461	0.6465	0.6636	0.6539	0.6465	0.3334	0.5039
900	0.6655	0.6610	0.6727	0.6690	0.6565	0.6467	0.6461	0.6635	0.6539	0.6461	0.3329	0.5034
1000	0.6653	0.6612	0.6722	0.6690	0.6563	0.6462	0.6472	0.6636	0.6543	0.6472	0.3334	0.5031
2000	0.6645	0.6563	0.6695	0.6678	0.6551	0.6456	0.6463	0.6641	0.6544	0.6463	0.3319	0.5023
3000	0.6640	0.6544	0.6689	0.6673	0.6544	0.6460	0.6466	0.6638	0.6527	0.6466	0.3336	0.5018
4000	0.6639	0.6534	0.6685	0.6672	0.6551	0.6456	0.6469	0.6637	0.6536	0.6468	0.3345	0.5021
5000	0.6642	0.6525	0.6681	0.6671	0.6545	0.6460	0.6464	0.6642	0.6517	0.6464	0.3336	0.5019
6000	0.6644	0.6526	0.6680	0.6670	0.6543	0.6458	0.6472	0.6643	0.6525	0.6471	0.3326	0.5016
7000	0.6641	0.6518	0.6678	0.6669	0.6545	0.6458	0.6467	0.6641	0.6537	0.6467	0.3337	0.5012
8000	0.6640	0.6517	0.6678	0.6669	0.6544	0.6462	0.6470	0.6640	0.6536	0.6470	0.3334	0.5014
9000	0.6639	0.6512	0.6676	0.6668	0.6541	0.6455	0.6468	0.6639	0.6529	0.6468	0.3331	0.5015
10000	0.6640	0.6512	0.6675	0.6668	0.6542	0.6457	0.6469	0.6640	0.6530	0.6469	0.3329	0.5010

Table 8: Average Size (as a proportion) of Maximum Induced Planar Subgraph on 5-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.6870	0.6900	0.6950	0.6310	0.6190	0.5830	0.5450	0.5810	0.5990	0.5410	0.2860	0.5180
40	0.6545	0.6545	0.6605	0.6275	0.6140	0.5750	0.5650	0.5840	0.5960	0.5640	0.2995	0.5160
60	0.6373	0.6393	0.6497	0.6223	0.6137	0.5753	0.5690	0.5887	0.5950	0.5677	0.3023	0.5103
80	0.6305	0.6300	0.6412	0.6202	0.6020	0.5747	0.5697	0.5905	0.5900	0.5697	0.2938	0.5108
100	0.6252	0.6250	0.6354	0.6214	0.6026	0.5746	0.5750	0.5928	0.5926	0.5748	0.2994	0.5094
200	0.6117	0.6115	0.6253	0.6162	0.5975	0.5743	0.5772	0.5943	0.5885	0.5769	0.3010	0.5064
300	0.6052	0.6034	0.6212	0.6130	0.5957	0.5738	0.5775	0.5941	0.5871	0.5773	0.3014	0.5047
400	0.6023	0.6009	0.6187	0.6119	0.5945	0.5742	0.5789	0.5948	0.5884	0.5789	0.3014	0.5054
500	0.6014	0.5993	0.6169	0.6109	0.5930	0.5740	0.5800	0.5959	0.5871	0.5799	0.3015	0.5040
600	0.6001	0.5974	0.6160	0.6108	0.5934	0.5747	0.5799	0.5958	0.5872	0.5799	0.3015	0.5040
700	0.5992	0.5960	0.6149	0.6106	0.5929	0.5747	0.5800	0.5965	0.5878	0.5800	0.3017	0.5042
800	0.5987	0.5950	0.6144	0.6105	0.5926	0.5749	0.5803	0.5959	0.5878	0.5803	0.3014	0.5042
900	0.5975	0.5933	0.6134	0.6097	0.5919	0.5746	0.5796	0.5955	0.5871	0.5796	0.3011	0.5036
1000	0.5982	0.5936	0.6130	0.6094	0.5917	0.5746	0.5797	0.5965	0.5874	0.5797	0.3021	0.5033
2000	0.5967	0.5895	0.6111	0.6089	0.5896	0.5745	0.5800	0.5961	0.5867	0.5800	0.3004	0.5020
3000	0.5963	0.5871	0.6099	0.6079	0.5903	0.5747	0.5801	0.5961	0.5851	0.5801	0.3020	0.5016
4000	0.5959	0.5860	0.6098	0.6082	0.5898	0.5740	0.5797	0.5958	0.5862	0.5797	0.3008	0.5016
5000	0.5959	0.5856	0.6091	0.6078	0.5894	0.5744	0.5800	0.5959	0.5863	0.5800	0.3008	0.5012
6000	0.5961	0.5852	0.6091	0.6078	0.5893	0.5747	0.5800	0.5961	0.5866	0.5800	0.3007	0.5017
7000	0.5959	0.5850	0.6089	0.6077	0.5894	0.5744	0.5802	0.5959	0.5867	0.5802	0.3017	0.5009
8000	0.5965	0.5845	0.6085	0.6075	0.5892	0.5747	0.5801	0.5964	0.5869	0.5801	0.3014	0.5011
9000	0.5962	0.5844	0.6086	0.6077	0.5891	0.5744	0.5803	0.5962	0.5862	0.5803	0.3013	0.5010
10000	0.5965	0.5843	0.6086	0.6077	0.5891	0.5747	0.5804	0.5965	0.5862	0.5804	0.3012	0.5007

Table 9: Average Size (as a proportion) of Maximum Induced Planar Subgraph on 6-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.6320	0.6320	0.6380	0.5750	0.5600	0.5250	0.4910	0.5140	0.5450	0.4890	0.2590	0.3660
40	0.5980	0.5975	0.6070	0.5775	0.5555	0.5210	0.5125	0.5320	0.5440	0.5110	0.2665	0.3590
60	0.5857	0.5887	0.5947	0.5697	0.5557	0.5170	0.5167	0.5393	0.5413	0.5163	0.2710	0.3567
80	0.5790	0.5777	0.5893	0.5690	0.5577	0.5218	0.5240	0.5410	0.5430	0.5232	0.2742	0.3503
100	0.5696	0.5706	0.5828	0.5688	0.5526	0.5204	0.5210	0.5364	0.5382	0.5206	0.2776	0.3506
200	0.5592	0.5587	0.5745	0.5647	0.5481	0.5216	0.5263	0.5414	0.5364	0.5260	0.2758	0.3449
300	0.5544	0.5531	0.5708	0.5635	0.5450	0.5203	0.5281	0.5439	0.5365	0.5281	0.2753	0.3432
400	0.5500	0.5486	0.5680	0.5618	0.5434	0.5199	0.5273	0.5427	0.5355	0.5273	0.2767	0.3408
500	0.5484	0.5459	0.5665	0.5612	0.5439	0.5216	0.5274	0.5419	0.5352	0.5274	0.2769	0.3419
600	0.5477	0.5458	0.5654	0.5604	0.5423	0.5211	0.5289	0.5436	0.5360	0.5289	0.2752	0.3403
700	0.5469	0.5433	0.5643	0.5598	0.5435	0.5218	0.5280	0.5431	0.5357	0.5279	0.2762	0.3403
800	0.5460	0.5432	0.5643	0.5603	0.5425	0.5202	0.5286	0.5430	0.5358	0.5286	0.2758	0.3400
900	0.5453	0.5419	0.5636	0.5595	0.5416	0.5219	0.5286	0.5430	0.5354	0.5285	0.2751	0.3395
1000	0.5447	0.5409	0.5634	0.5600	0.5429	0.5213	0.5279	0.5430	0.5347	0.5279	0.2774	0.3384
2000	0.5427	0.5364	0.5605	0.5585	0.5406	0.5212	0.5275	0.5425	0.5341	0.5275	0.2767	0.3374
3000	0.5434	0.5353	0.5606	0.5588	0.5406	0.5213	0.5284	0.5432	0.5325	0.5284	0.2770	0.3363
4000	0.5437	0.5352	0.5601	0.5587	0.5405	0.5216	0.5289	0.5436	0.5352	0.5289	0.2757	0.3363
5000	0.5437	0.5342	0.5600	0.5586	0.5397	0.5210	0.5288	0.5436	0.5353	0.5288	0.2764	0.3361
6000	0.5440	0.5338	0.5595	0.5583	0.5400	0.5213	0.5285	0.5439	0.5350	0.5285	0.2767	0.3357
7000	0.5434	0.5334	0.5595	0.5584	0.5399	0.5212	0.5288	0.5433	0.5350	0.5288	0.2761	0.3359
8000	0.5437	0.5334	0.5594	0.5584	0.5401	0.5207	0.5292	0.5437	0.5342	0.5292	0.2766	0.3355
9000	0.5436	0.5326	0.5594	0.5585	0.5395	0.5207	0.5285	0.5436	0.5348	0.5285	0.2760	0.3359
10000	0.5436	0.5326	0.5589	0.5580	0.5396	0.5209	0.5289	0.5436	0.5343	0.5289	0.2764	0.3352

Table 10: Average Size (as a proportion) of Maximum Induced Planar Subgraph on 7-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.5850	0.5860	0.5960	0.5290	0.5140	0.4720	0.4480	0.4750	0.5010	0.4430	0.2380	0.3630
40	0.5545	0.5540	0.5665	0.5260	0.5155	0.4755	0.4700	0.4855	0.5010	0.4690	0.2515	0.3560
60	0.5403	0.5397	0.5523	0.5280	0.5117	0.4750	0.4737	0.4913	0.4943	0.4727	0.2487	0.3547
80	0.5343	0.5348	0.5477	0.5280	0.5128	0.4765	0.4820	0.4970	0.5000	0.4815	0.2545	0.3530
100	0.5284	0.5278	0.5418	0.5258	0.5090	0.4738	0.4800	0.4954	0.4970	0.4798	0.2544	0.3490
200	0.5169	0.5155	0.5321	0.5210	0.5070	0.4756	0.4852	0.5002	0.4951	0.4850	0.2532	0.3444
300	0.5108	0.5104	0.5287	0.5212	0.5043	0.4770	0.4856	0.4999	0.4950	0.4854	0.2527	0.3433
400	0.5083	0.5072	0.5262	0.5194	0.5040	0.4776	0.4867	0.5003	0.4944	0.4865	0.2543	0.3419
500	0.5055	0.5041	0.5252	0.5196	0.5034	0.4800	0.4863	0.4993	0.4938	0.4863	0.2540	0.3407
600	0.5046	0.5028	0.5237	0.5189	0.5022	0.4788	0.4865	0.5001	0.4934	0.4864	0.2545	0.3401
700	0.5043	0.5019	0.5229	0.5187	0.5029	0.4795	0.4865	0.5004	0.4939	0.4864	0.2562	0.3409
800	0.5042	0.5018	0.5229	0.5187	0.5032	0.4792	0.4877	0.5012	0.4941	0.4877	0.2561	0.3395
900	0.5034	0.5001	0.5224	0.5187	0.5017	0.4781	0.4869	0.5011	0.4939	0.4869	0.2553	0.3408
1000	0.5024	0.4995	0.5220	0.5185	0.5016	0.4792	0.4869	0.5001	0.4934	0.4869	0.2550	0.3397
2000	0.5016	0.4958	0.5195	0.5172	0.5006	0.4782	0.4873	0.5010	0.4928	0.4873	0.2559	0.3379
3000	0.5014	0.4950	0.5184	0.5165	0.5002	0.4791	0.4882	0.5011	0.4937	0.4882	0.2558	0.3390
4000	0.5013	0.4934	0.5184	0.5168	0.5000	0.4786	0.4876	0.5012	0.4921	0.4876	0.2564	0.3379
5000	0.5016	0.4931	0.5180	0.5165	0.5006	0.4785	0.4878	0.5015	0.4939	0.4878	0.2560	0.3373
6000	0.5019	0.4928	0.5176	0.5163	0.5001	0.4790	0.4880	0.5019	0.4943	0.4880	0.2561	0.3375
7000	0.5008	0.4916	0.5176	0.5165	0.4996	0.4792	0.4873	0.5008	0.4919	0.4873	0.2558	0.3370
8000	0.5013	0.4915	0.5174	0.5164	0.4993	0.4785	0.4875	0.5013	0.4935	0.4875	0.2543	0.3368
9000	0.5016	0.4915	0.5173	0.5162	0.4996	0.4787	0.4875	0.5016	0.4932	0.4875	0.2551	0.3377
10000	0.5016	0.4916	0.5173	0.5163	0.4999	0.4785	0.4879	0.5016	0.4934	0.4879	0.2555	0.3374

Table 11: Average Size (as a proportion) of Maximum Induced Planar Subgraph on 8-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.5510	0.5520	0.5440	0.4880	0.4800	0.4290	0.4050	0.4380	0.4550	0.4030	0.2090	0.3660
40	0.5170	0.5185	0.5270	0.4930	0.4815	0.4395	0.4300	0.4505	0.4600	0.4285	0.2280	0.3565
60	0.5013	0.5013	0.5163	0.4907	0.4770	0.4390	0.4370	0.4533	0.4583	0.4350	0.2350	0.3520
80	0.4950	0.4945	0.5105	0.4907	0.4765	0.4405	0.4415	0.4570	0.4580	0.4407	0.2330	0.3510
100	0.4908	0.4912	0.5070	0.4904	0.4784	0.4424	0.4446	0.4596	0.4590	0.4442	0.2352	0.3486
200	0.4798	0.4804	0.4964	0.4861	0.4739	0.4426	0.4490	0.4640	0.4592	0.4487	0.2358	0.3458
300	0.4763	0.4753	0.4929	0.4852	0.4709	0.4439	0.4519	0.4655	0.4604	0.4519	0.2378	0.3428
400	0.4740	0.4738	0.4912	0.4851	0.4702	0.4446	0.4534	0.4657	0.4607	0.4533	0.2357	0.3411
500	0.4712	0.4704	0.4896	0.4836	0.4699	0.4441	0.4521	0.4658	0.4599	0.4520	0.2390	0.3398
600	0.4706	0.4692	0.4893	0.4846	0.4679	0.4450	0.4532	0.4658	0.4597	0.4531	0.2365	0.3399
700	0.4687	0.4675	0.4880	0.4835	0.4689	0.4437	0.4522	0.4651	0.4589	0.4522	0.2391	0.3395
800	0.4692	0.4670	0.4875	0.4830	0.4683	0.4448	0.4527	0.4662	0.4597	0.4527	0.2375	0.3390
900	0.4686	0.4661	0.4870	0.4834	0.4684	0.4447	0.4533	0.4656	0.4596	0.4533	0.2402	0.3384
1000	0.4684	0.4650	0.4869	0.4834	0.4686	0.4437	0.4528	0.4666	0.4592	0.4528	0.2385	0.3382
2000	0.4659	0.4603	0.4846	0.4820	0.4679	0.4440	0.4517	0.4655	0.4580	0.4517	0.2391	0.3374
3000	0.4669	0.4603	0.4839	0.4819	0.4672	0.4441	0.4534	0.4667	0.4595	0.4534	0.2375	0.3361
4000	0.4674	0.4596	0.4831	0.4814	0.4668	0.4452	0.4539	0.4671	0.4589	0.4539	0.2383	0.3359
5000	0.4666	0.4586	0.4827	0.4811	0.4668	0.4442	0.4534	0.4665	0.4590	0.4534	0.2384	0.3355
6000	0.4665	0.4581	0.4824	0.4810	0.4666	0.4442	0.4535	0.4664	0.4577	0.4535	0.2385	0.3357
7000	0.4664	0.4581	0.4820	0.4807	0.4670	0.4448	0.4539	0.4663	0.4590	0.4539	0.2385	0.3353
8000	0.4664	0.4570	0.4824	0.4811	0.4664	0.4447	0.4531	0.4664	0.4592	0.4531	0.2384	0.3354
9000	0.4666	0.4576	0.4826	0.4815	0.4665	0.4445	0.4539	0.4666	0.4590	0.4539	0.2390	0.3352
10000	0.4668	0.4576	0.4822	0.4812	0.4665	0.4438	0.4540	0.4668	0.4596	0.4540	0.2379	0.3352

Table 12: Average Size (as a proportion) of Maximum Induced Planar Subgraph on 9-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.5040	0.5040	0.5110	0.4530	0.4400	0.3950	0.3750	0.3970	0.4240	0.3700	0.2010	0.2860
40	0.4850	0.4820	0.4975	0.4620	0.4500	0.4085	0.4020	0.4210	0.4310	0.4015	0.2135	0.2755
60	0.4747	0.4747	0.4813	0.4573	0.4480	0.4087	0.4097	0.4263	0.4323	0.4093	0.2133	0.2760
80	0.4670	0.4655	0.4793	0.4588	0.4477	0.4117	0.4150	0.4298	0.4317	0.4140	0.2210	0.2722
100	0.4636	0.4640	0.4760	0.4608	0.4442	0.4108	0.4168	0.4310	0.4324	0.4166	0.2168	0.2696
200	0.4513	0.4506	0.4669	0.4557	0.4441	0.4132	0.4201	0.4329	0.4295	0.4196	0.2209	0.2643
300	0.4461	0.4454	0.4631	0.4556	0.4440	0.4133	0.4224	0.4346	0.4305	0.4223	0.2261	0.2612
400	0.4434	0.4424	0.4613	0.4551	0.4422	0.4140	0.4215	0.4351	0.4296	0.4215	0.2212	0.2605
500	0.4417	0.4412	0.4606	0.4554	0.4415	0.4144	0.4230	0.4362	0.4289	0.4230	0.2226	0.2597
600	0.4407	0.4397	0.4588	0.4532	0.4411	0.4144	0.4234	0.4362	0.4304	0.4233	0.2231	0.2577
700	0.4407	0.4388	0.4583	0.4537	0.4415	0.4139	0.4240	0.4369	0.4307	0.4240	0.2229	0.2581
800	0.4403	0.4379	0.4577	0.4534	0.4398	0.4155	0.4249	0.4372	0.4308	0.4249	0.2223	0.2567
900	0.4389	0.4367	0.4564	0.4524	0.4408	0.4156	0.4241	0.4362	0.4305	0.4241	0.2249	0.2570
1000	0.4382	0.4362	0.4566	0.4526	0.4394	0.4156	0.4244	0.4360	0.4301	0.4244	0.2236	0.2562
2000	0.4371	0.4330	0.4548	0.4522	0.4397	0.4163	0.4249	0.4365	0.4310	0.4249	0.2243	0.2557
3000	0.4362	0.4305	0.4540	0.4518	0.4389	0.4156	0.4241	0.4359	0.4296	0.4241	0.2244	0.2545
4000	0.4370	0.4302	0.4535	0.4517	0.4384	0.4153	0.4249	0.4368	0.4308	0.4249	0.2243	0.2542
5000	0.4364	0.4300	0.4534	0.4518	0.4384	0.4146	0.4252	0.4362	0.4294	0.4252	0.2243	0.2550
6000	0.4368	0.4291	0.4531	0.4516	0.4383	0.4148	0.4246	0.4367	0.4288	0.4246	0.2232	0.2535
7000	0.4370	0.4288	0.4525	0.4511	0.4378	0.4151	0.4247	0.4369	0.4292	0.4247	0.2229	0.2541
8000	0.4369	0.4284	0.4527	0.4514	0.4382	0.4156	0.4245	0.4369	0.4300	0.4245	0.2241	0.2536
9000	0.4368	0.4286	0.4524	0.4513	0.4385	0.4155	0.4248	0.4367	0.4294	0.4248	0.2239	0.2537
10000	0.4372	0.4285	0.4526	0.4515	0.4380	0.4151	0.4251	0.4372	0.4300	0.4251	0.2237	0.2537

2.3 Tests on Graphs Generated by the Classical Method

Table 13: Average Size (as a proportion) of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 3 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.9320	0.9310	0.9300	0.8900	0.8870	0.8410	0.8070	0.8460	0.8590	0.8060	0.4950	0.4380
40	0.9045	0.9025	0.9060	0.8845	0.8815	0.8365	0.8265	0.8525	0.8595	0.8255	0.4985	0.3850
60	0.8933	0.8910	0.8930	0.8770	0.8757	0.8367	0.8323	0.8537	0.8560	0.8313	0.4973	0.3570
80	0.8895	0.8892	0.8905	0.8785	0.8783	0.8422	0.8405	0.8627	0.8615	0.8402	0.5043	0.3563
100	0.8814	0.8784	0.8832	0.8722	0.8704	0.8354	0.8360	0.8588	0.8544	0.8352	0.5014	0.3428
200	0.8696	0.8680	0.8749	0.8676	0.8652	0.8375	0.8408	0.8580	0.8521	0.8407	0.5098	0.3129
300	0.8695	0.8665	0.8739	0.8687	0.8657	0.8403	0.8439	0.8623	0.8525	0.8437	0.5095	0.2953
400	0.8627	0.8594	0.8678	0.8629	0.8611	0.8367	0.8409	0.8587	0.8493	0.8408	0.5078	0.2903
500	0.8659	0.8608	0.8688	0.8653	0.8626	0.8398	0.8436	0.8630	0.8514	0.8433	0.5109	0.2937
600	0.8656	0.8609	0.8694	0.8659	0.8632	0.8392	0.8467	0.8629	0.8532	0.8464	0.5098	0.2799
700	0.8674	0.8612	0.8705	0.8674	0.8651	0.8419	0.8481	0.8659	0.8551	0.8477	0.5118	0.2761
800	0.8652	0.8583	0.8678	0.8649	0.8625	0.8409	0.8459	0.8638	0.8523	0.8458	0.5102	0.2747
900	0.8650	0.8576	0.8679	0.8651	0.8629	0.8404	0.8460	0.8641	0.8526	0.8457	0.5091	0.2714
1000	0.8651	0.8586	0.8676	0.8652	0.8630	0.8404	0.8469	0.8643	0.8532	0.8467	0.5112	0.2730
2000	0.8650	0.8549	0.8660	0.8642	0.8617	0.8411	0.8465	0.8648	0.8519	0.8462	0.5081	0.2712
3000	0.8636	0.8529	0.8642	0.8629	0.8602	0.8394	0.8465	0.8634	0.8512	0.8463	0.5093	0.2685
4000	0.8649	0.8529	0.8650	0.8637	0.8615	0.8409	0.8474	0.8648	0.8527	0.8472	0.5103	0.2611
5000	0.8618	0.8501	0.8621	0.8611	0.8585	0.8379	0.8450	0.8618	0.8498	0.8447	0.5090	0.2608
6000	0.8639	0.8510	0.8634	0.8625	0.8600	0.8400	0.8461	0.8639	0.8519	0.8459	0.5107	0.2634
7000	0.8625	0.8496	0.8622	0.8614	0.8588	0.8391	0.8454	0.8624	0.8510	0.8451	0.5097	0.2626
8000	0.8625	0.8498	0.8623	0.8616	0.8591	0.8388	0.8455	0.8625	0.8504	0.8453	0.5094	0.2616
9000	0.8631	0.8499	0.8626	0.8618	0.8593	0.8391	0.8459	0.8631	0.8516	0.8457	0.5097	0.2525
10000	0.8627	0.8494	0.8623	0.8616	0.8589	0.8387	0.8454	0.8627	0.8506	0.8451	0.5091	0.2495

Table 14: Average Size (as a proportion) of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 4 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.8570	0.8540	0.8570	0.8120	0.8100	0.7550	0.7250	0.7610	0.7820	0.7240	0.4360	0.3840
40	0.8275	0.8240	0.8265	0.7985	0.7960	0.7445	0.7400	0.7705	0.7735	0.7395	0.4420	0.3465
60	0.8130	0.8123	0.8123	0.7970	0.7917	0.7490	0.7483	0.7747	0.7703	0.7467	0.4433	0.3167
80	0.8092	0.8082	0.8125	0.7977	0.7937	0.7495	0.7568	0.7798	0.7780	0.7548	0.4480	0.3140
100	0.8030	0.8014	0.8068	0.7918	0.7886	0.7494	0.7562	0.7764	0.7738	0.7558	0.4434	0.2914
200	0.7882	0.7850	0.7923	0.7847	0.7822	0.7458	0.7535	0.7763	0.7651	0.7527	0.4447	0.2739
300	0.7851	0.7825	0.7911	0.7851	0.7816	0.7465	0.7581	0.7781	0.7684	0.7571	0.4491	0.2647
400	0.7860	0.7818	0.7914	0.7869	0.7832	0.7503	0.7606	0.7819	0.7706	0.7599	0.4487	0.2622
500	0.7835	0.7777	0.7886	0.7848	0.7812	0.7490	0.7595	0.7809	0.7685	0.7585	0.4475	0.2556
600	0.7847	0.7784	0.7901	0.7862	0.7831	0.7515	0.7618	0.7824	0.7706	0.7611	0.4481	0.2551
700	0.7809	0.7750	0.7864	0.7831	0.7796	0.7475	0.7595	0.7793	0.7675	0.7588	0.4469	0.2556
800	0.7803	0.7731	0.7856	0.7826	0.7790	0.7475	0.7587	0.7792	0.7662	0.7580	0.4470	0.2497
900	0.7837	0.7761	0.7880	0.7854	0.7818	0.7504	0.7624	0.7827	0.7706	0.7616	0.4503	0.2453
1000	0.7834	0.7757	0.7877	0.7847	0.7812	0.7517	0.7623	0.7825	0.7700	0.7616	0.4490	0.2478
2000	0.7823	0.7714	0.7853	0.7838	0.7798	0.7507	0.7617	0.7821	0.7696	0.7611	0.4494	0.2333
3000	0.7802	0.7683	0.7825	0.7813	0.7776	0.7485	0.7605	0.7802	0.7684	0.7598	0.4483	0.2314
4000	0.7812	0.7681	0.7825	0.7813	0.7778	0.7499	0.7605	0.7812	0.7680	0.7597	0.4486	0.2282
5000	0.7813	0.7675	0.7824	0.7812	0.7776	0.7492	0.7609	0.7812	0.7685	0.7601	0.4479	0.2280
6000	0.7812	0.7666	0.7820	0.7810	0.7773	0.7488	0.7604	0.7812	0.7676	0.7596	0.4486	0.2291
7000	0.7817	0.7679	0.7830	0.7822	0.7785	0.7502	0.7621	0.7817	0.7692	0.7613	0.4496	0.2273
8000	0.7824	0.7678	0.7831	0.7823	0.7786	0.7505	0.7621	0.7824	0.7690	0.7613	0.4481	0.2270
9000	0.7823	0.7673	0.7831	0.7824	0.7786	0.7511	0.7619	0.7822	0.7693	0.7612	0.4491	0.2273
10000	0.7818	0.7668	0.7828	0.7822	0.7783	0.7508	0.7617	0.7818	0.7686	0.7610	0.4489	0.2268

Table 15: Average Size (as a proportion) of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 5 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.7810	0.7780	0.7830	0.7340	0.7330	0.6640	0.6490	0.6860	0.7020	0.6420	0.3900	0.3460
40	0.7625	0.7585	0.7635	0.7395	0.7350	0.6720	0.6765	0.7050	0.7100	0.6740	0.4025	0.3105
60	0.7447	0.7413	0.7497	0.7293	0.7283	0.6717	0.6787	0.7070	0.7067	0.6760	0.3997	0.2870
80	0.7293	0.7278	0.7345	0.7188	0.7165	0.6598	0.6737	0.7010	0.6940	0.6718	0.3915	0.2692
100	0.7374	0.7346	0.7426	0.7284	0.7256	0.6816	0.6896	0.7114	0.7058	0.6880	0.4030	0.2718
200	0.7210	0.7173	0.7294	0.7231	0.7184	0.6763	0.6865	0.7109	0.6990	0.6847	0.4039	0.2472
300	0.7187	0.7144	0.7269	0.7212	0.7167	0.6761	0.6899	0.7119	0.7007	0.6874	0.4035	0.2402
400	0.7144	0.7089	0.7232	0.7181	0.7148	0.6743	0.6874	0.7111	0.6986	0.6850	0.4017	0.2303
500	0.7108	0.7046	0.7202	0.7152	0.7107	0.6734	0.6855	0.7083	0.6961	0.6834	0.4013	0.2320
600	0.7150	0.7079	0.7228	0.7190	0.7150	0.6783	0.6899	0.7130	0.6998	0.6878	0.4052	0.2277
700	0.7135	0.7063	0.7214	0.7178	0.7135	0.6776	0.6899	0.7126	0.6988	0.6872	0.4032	0.2254
800	0.7134	0.7049	0.7200	0.7167	0.7130	0.6751	0.6891	0.7125	0.6997	0.6870	0.4046	0.2223
900	0.7103	0.7015	0.7174	0.7143	0.7102	0.6742	0.6867	0.7097	0.6966	0.6846	0.4021	0.2196
1000	0.7126	0.7030	0.7196	0.7168	0.7123	0.6759	0.6893	0.7121	0.6988	0.6871	0.4041	0.2207
2000	0.7150	0.7023	0.7182	0.7163	0.7125	0.6786	0.6922	0.7149	0.7013	0.6898	0.4042	0.2177
3000	0.7127	0.6986	0.7163	0.7148	0.7104	0.6763	0.6894	0.7126	0.6983	0.6867	0.4029	0.2102
4000	0.7124	0.6976	0.7161	0.7147	0.7101	0.6773	0.6893	0.7124	0.6983	0.6867	0.4026	0.2081
5000	0.7118	0.6967	0.7153	0.7141	0.7093	0.6759	0.6890	0.7118	0.6978	0.6866	0.4033	0.2089
6000	0.7125	0.6967	0.7153	0.7143	0.7100	0.6761	0.6894	0.7124	0.6979	0.6870	0.4029	0.2102
7000	0.7125	0.6964	0.7152	0.7141	0.7100	0.6766	0.6895	0.7125	0.6976	0.6869	0.4020	0.2071
8000	0.7125	0.6968	0.7155	0.7146	0.7103	0.6771	0.6900	0.7125	0.6987	0.6874	0.4034	0.2063
9000	0.7127	0.6965	0.7149	0.7141	0.7099	0.6766	0.6899	0.7127	0.6992	0.6875	0.4034	0.2056
10000	0.7120	0.6953	0.7146	0.7138	0.7094	0.6759	0.6890	0.7120	0.6979	0.6864	0.4030	0.2039

Table 16: Average Size (as a proportion) of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 6 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.7160	0.7170	0.7190	0.6720	0.6710	0.5990	0.5860	0.6270	0.6340	0.5780	0.3330	0.3180
40	0.6890	0.6900	0.6960	0.6670	0.6615	0.5990	0.6035	0.6335	0.6340	0.6000	0.3610	0.2760
60	0.6853	0.6803	0.6920	0.6700	0.6673	0.6053	0.6183	0.6473	0.6417	0.6143	0.3543	0.2567
80	0.6770	0.6758	0.6840	0.6665	0.6635	0.6098	0.6190	0.6480	0.6378	0.6158	0.3598	0.2460
100	0.6682	0.6660	0.6780	0.6656	0.6612	0.6090	0.6188	0.6462	0.6370	0.6150	0.3624	0.2418
200	0.6603	0.6571	0.6703	0.6623	0.6580	0.6125	0.6256	0.6506	0.6382	0.6220	0.3653	0.2271
300	0.6551	0.6519	0.6668	0.6601	0.6562	0.6121	0.6257	0.6499	0.6375	0.6221	0.3641	0.2157
400	0.6554	0.6516	0.6680	0.6627	0.6581	0.6157	0.6292	0.6518	0.6402	0.6260	0.3658	0.2154
500	0.6556	0.6506	0.6658	0.6610	0.6565	0.6154	0.6301	0.6531	0.6407	0.6270	0.3678	0.2090
600	0.6566	0.6502	0.6662	0.6615	0.6572	0.6167	0.6313	0.6554	0.6416	0.6280	0.3655	0.2070
700	0.6544	0.6479	0.6641	0.6603	0.6549	0.6155	0.6302	0.6532	0.6400	0.6264	0.3676	0.2064
800	0.6550	0.6472	0.6638	0.6602	0.6566	0.6147	0.6306	0.6542	0.6406	0.6265	0.3656	0.2089
900	0.6528	0.6442	0.6616	0.6579	0.6538	0.6136	0.6287	0.6523	0.6386	0.6249	0.3651	0.2058
1000	0.6530	0.6446	0.6621	0.6592	0.6548	0.6153	0.6297	0.6523	0.6399	0.6259	0.3660	0.2039
2000	0.6534	0.6417	0.6606	0.6587	0.6535	0.6157	0.6303	0.6532	0.6401	0.6269	0.3667	0.1986
3000	0.6528	0.6395	0.6582	0.6566	0.6519	0.6147	0.6299	0.6528	0.6389	0.6258	0.3675	0.1974
4000	0.6535	0.6392	0.6588	0.6573	0.6527	0.6149	0.6304	0.6535	0.6394	0.6267	0.3655	0.1929
5000	0.6544	0.6388	0.6598	0.6585	0.6537	0.6166	0.6307	0.6544	0.6403	0.6270	0.3676	0.1920
6000	0.6538	0.6385	0.6586	0.6575	0.6529	0.6150	0.6305	0.6538	0.6398	0.6268	0.3668	0.1955
7000	0.6537	0.6384	0.6588	0.6577	0.6532	0.6162	0.6306	0.6537	0.6396	0.6271	0.3672	0.1950
8000	0.6541	0.6382	0.6585	0.6575	0.6528	0.6156	0.6309	0.6541	0.6399	0.6271	0.3675	0.1913
9000	0.6539	0.6375	0.6578	0.6569	0.6522	0.6158	0.6301	0.6538	0.6398	0.6262	0.3662	0.1921
10000	0.6547	0.6382	0.6587	0.6579	0.6532	0.6164	0.6311	0.6547	0.6405	0.6272	0.3671	0.1933

Table 17: Average Size (as a proportion) of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 7 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.6640	0.6620	0.6630	0.6130	0.6050	0.5320	0.5340	0.5630	0.5830	0.5230	0.3010	0.2890
40	0.6430	0.6400	0.6515	0.6240	0.6185	0.5465	0.5570	0.5870	0.5880	0.5495	0.3300	0.2570
60	0.6253	0.6260	0.6393	0.6193	0.6167	0.5590	0.5627	0.5887	0.5867	0.5573	0.3307	0.2363
80	0.6222	0.6200	0.6282	0.6145	0.6090	0.5520	0.5675	0.5890	0.5860	0.5625	0.3265	0.2290
100	0.6166	0.6134	0.6288	0.6120	0.6072	0.5542	0.5672	0.5902	0.5832	0.5626	0.3308	0.2190
200	0.6077	0.6041	0.6217	0.6123	0.6090	0.5606	0.5732	0.5962	0.5867	0.5688	0.3348	0.2087
300	0.6068	0.6049	0.6207	0.6138	0.6101	0.5629	0.5776	0.6007	0.5879	0.5724	0.3336	0.2052
400	0.6059	0.6005	0.6178	0.6124	0.6084	0.5627	0.5772	0.6024	0.5894	0.5703	0.3356	0.1966
500	0.6053	0.5996	0.6170	0.6119	0.6085	0.5640	0.5792	0.6029	0.5901	0.5741	0.3352	0.1922
600	0.6058	0.5994	0.6177	0.6135	0.6083	0.5659	0.5807	0.6045	0.5915	0.5754	0.3369	0.1918
700	0.6042	0.5966	0.6156	0.6112	0.6062	0.5642	0.5790	0.6028	0.5896	0.5738	0.3353	0.1927
800	0.6032	0.5957	0.6141	0.6105	0.6062	0.5641	0.5786	0.6020	0.5894	0.5739	0.3360	0.1901
900	0.6032	0.5944	0.6141	0.6108	0.6066	0.5640	0.5784	0.6025	0.5888	0.5736	0.3377	0.1905
1000	0.6039	0.5949	0.6139	0.6108	0.6061	0.5653	0.5795	0.6035	0.5905	0.5737	0.3380	0.1892
2000	0.6040	0.5913	0.6121	0.6100	0.6055	0.5658	0.5801	0.6039	0.5898	0.5740	0.3362	0.1857
3000	0.6041	0.5900	0.6117	0.6097	0.6052	0.5657	0.5798	0.6041	0.5894	0.5738	0.3369	0.1859
4000	0.6050	0.5905	0.6117	0.6102	0.6053	0.5661	0.5807	0.6050	0.5907	0.5752	0.3381	0.1828
5000	0.6040	0.5892	0.6106	0.6093	0.6046	0.5650	0.5806	0.6040	0.5902	0.5750	0.3374	0.1802
6000	0.6051	0.5898	0.6118	0.6107	0.6058	0.5667	0.5815	0.6051	0.5912	0.5759	0.3375	0.1783
7000	0.6039	0.5890	0.6110	0.6100	0.6051	0.5657	0.5810	0.6039	0.5908	0.5755	0.3379	0.1795
8000	0.6044	0.5885	0.6110	0.6100	0.6051	0.5670	0.5810	0.6044	0.5906	0.5755	0.3373	0.1787
9000	0.6049	0.5888	0.6110	0.6099	0.6054	0.5661	0.5815	0.6048	0.5913	0.5759	0.3381	0.1811
10000	0.6056	0.5891	0.6115	0.6106	0.6062	0.5674	0.5816	0.6056	0.5912	0.5761	0.3372	0.1755

Table 18: Average Size (as a proportion) of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 8 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.5990	0.5970	0.6090	0.5540	0.5490	0.4840	0.4760	0.5040	0.5240	0.4680	0.2700	0.2730
40	0.5995	0.5955	0.6045	0.5750	0.5710	0.5025	0.5140	0.5415	0.5450	0.5065	0.2945	0.2410
60	0.5870	0.5863	0.6007	0.5783	0.5720	0.5093	0.5227	0.5477	0.5437	0.5170	0.3050	0.2267
80	0.5820	0.5787	0.5912	0.5753	0.5707	0.5138	0.5272	0.5500	0.5475	0.5225	0.3003	0.2142
100	0.5772	0.5754	0.5916	0.5754	0.5712	0.5112	0.5304	0.5548	0.5480	0.5236	0.3046	0.2074
200	0.5671	0.5658	0.5822	0.5728	0.5682	0.5172	0.5324	0.5568	0.5447	0.5269	0.3109	0.1949
300	0.5655	0.5631	0.5806	0.5738	0.5702	0.5222	0.5379	0.5607	0.5469	0.5295	0.3116	0.1877
400	0.5645	0.5593	0.5777	0.5720	0.5673	0.5227	0.5375	0.5610	0.5487	0.5310	0.3124	0.1841
500	0.5642	0.5578	0.5767	0.5719	0.5668	0.5240	0.5372	0.5620	0.5476	0.5305	0.3126	0.1826
600	0.5606	0.5543	0.5738	0.5690	0.5654	0.5204	0.5360	0.5592	0.5463	0.5286	0.3115	0.1819
700	0.5627	0.5562	0.5755	0.5714	0.5674	0.5231	0.5387	0.5618	0.5487	0.5318	0.3123	0.1799
800	0.5647	0.5570	0.5765	0.5728	0.5686	0.5247	0.5408	0.5636	0.5499	0.5341	0.3150	0.1786
900	0.5627	0.5550	0.5747	0.5715	0.5667	0.5251	0.5391	0.5622	0.5491	0.5316	0.3125	0.1791
1000	0.5638	0.5549	0.5752	0.5718	0.5673	0.5241	0.5396	0.5632	0.5501	0.5329	0.3138	0.1780
2000	0.5624	0.5506	0.5724	0.5703	0.5650	0.5234	0.5390	0.5623	0.5484	0.5315	0.3127	0.1744
3000	0.5604	0.5479	0.5705	0.5687	0.5633	0.5224	0.5376	0.5603	0.5468	0.5302	0.3122	0.1720
4000	0.5620	0.5484	0.5705	0.5692	0.5646	0.5231	0.5390	0.5620	0.5486	0.5317	0.3126	0.1716
5000	0.5634	0.5494	0.5715	0.5703	0.5657	0.5243	0.5406	0.5634	0.5499	0.5328	0.3137	0.1734
6000	0.5625	0.5483	0.5706	0.5694	0.5649	0.5250	0.5400	0.5624	0.5492	0.5328	0.3140	0.1701
7000	0.5625	0.5475	0.5701	0.5689	0.5641	0.5239	0.5395	0.5625	0.5482	0.5324	0.3129	0.1702
8000	0.5634	0.5487	0.5713	0.5704	0.5657	0.5253	0.5407	0.5634	0.5498	0.5336	0.3138	0.1713
9000	0.5615	0.5464	0.5694	0.5685	0.5635	0.5233	0.5387	0.5615	0.5487	0.5316	0.3129	0.1687
10000	0.5629	0.5471	0.5704	0.5695	0.5646	0.5246	0.5396	0.5629	0.5492	0.5323	0.3131	0.1680

Table 19: Average Size (as a proportion) of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 9 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	0.5700	0.5690	0.5790	0.5150	0.5120	0.4450	0.4460	0.4740	0.4930	0.4360	0.2540	0.2510
40	0.5575	0.5570	0.5680	0.5350	0.5345	0.4685	0.4790	0.5050	0.5030	0.4680	0.2775	0.2260
60	0.5463	0.5427	0.5587	0.5340	0.5320	0.4697	0.4843	0.5097	0.5063	0.4760	0.2823	0.2007
80	0.5443	0.5425	0.5593	0.5335	0.5378	0.4787	0.4900	0.5162	0.5112	0.4827	0.2878	0.2015
100	0.5408	0.5408	0.5568	0.5343	0.5372	0.4840	0.4954	0.5166	0.5106	0.4884	0.2884	0.1916
200	0.5317	0.5302	0.5481	0.5388	0.5343	0.4834	0.4989	0.5228	0.5116	0.4911	0.2895	0.1821
300	0.5263	0.5235	0.5427	0.5365	0.5323	0.4852	0.4985	0.5213	0.5094	0.4904	0.2910	0.1757
400	0.5262	0.5217	0.5417	0.5363	0.5316	0.4867	0.4999	0.5229	0.5106	0.4921	0.2908	0.1726
500	0.5259	0.5214	0.5405	0.5356	0.5305	0.4840	0.5006	0.5237	0.5118	0.4924	0.2911	0.1730
600	0.5240	0.5182	0.5391	0.5346	0.5298	0.4849	0.5001	0.5226	0.5099	0.4921	0.2890	0.1684
700	0.5240	0.5187	0.5384	0.5347	0.5297	0.4857	0.5011	0.5231	0.5105	0.4927	0.2886	0.1697
800	0.5261	0.5193	0.5402	0.5363	0.5317	0.4883	0.5027	0.5250	0.5128	0.4943	0.2927	0.1689
900	0.5260	0.5190	0.5398	0.5364	0.5318	0.4880	0.5032	0.5255	0.5125	0.4945	0.2912	0.1701
1000	0.5245	0.5168	0.5372	0.5343	0.5299	0.4855	0.5014	0.5241	0.5114	0.4936	0.2900	0.1669
2000	0.5248	0.5137	0.5357	0.5335	0.5289	0.4873	0.5019	0.5248	0.5111	0.4937	0.2912	0.1651
3000	0.5259	0.5139	0.5362	0.5344	0.5298	0.4890	0.5037	0.5259	0.5130	0.4958	0.2918	0.1642
4000	0.5261	0.5131	0.5363	0.5348	0.5301	0.4882	0.5041	0.5261	0.5132	0.4959	0.2922	0.1634
5000	0.5247	0.5124	0.5354	0.5341	0.5290	0.4882	0.5031	0.5246	0.5121	0.4946	0.2922	0.1613
6000	0.5266	0.5132	0.5355	0.5345	0.5296	0.4886	0.5045	0.5266	0.5138	0.4966	0.2930	0.1607
7000	0.5256	0.5117	0.5354	0.5342	0.5292	0.4883	0.5033	0.5256	0.5125	0.4949	0.2921	0.1590
8000	0.5256	0.5113	0.5347	0.5335	0.5289	0.4874	0.5029	0.5255	0.5124	0.4947	0.2919	0.1596
9000	0.5257	0.5111	0.5348	0.5340	0.5292	0.4883	0.5033	0.5257	0.5122	0.4949	0.2922	0.1605
10000	0.5264	0.5124	0.5354	0.5345	0.5301	0.4896	0.5045	0.5264	0.5134	0.4963	0.2925	0.1595

3 Results - Size of Induced Planar Subgraph

3.1 Tests on Graphs Generated By Bollobás Method

Table 20: Average Size of Maximum Induced Planar Subgraph on 3-regular graphs of size n produced by Bollobás algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	17.50 (0.61)	17.44 (0.54)	17.56 (0.61)	15.98 (0.55)	15.98 (0.55)	15.12 (0.33)	14.00 (0.00)	15.00 (0.00)	15.38 (0.53)	14.00 (0.00)	7.46 (0.61)	10.32 (0.47)
40	33.36 (0.88)	33.24 (0.94)	33.32 (0.65)	31.30 (0.68)	31.30 (0.68)	30.24 (0.43)	28.94 (0.24)	30.06 (0.24)	30.58 (0.57)	28.94 (0.24)	14.96 (0.86)	20.60 (0.57)
60	49.08 (0.83)	49.00 (1.05)	48.84 (0.82)	46.38 (0.73)	46.38 (0.73)	45.36 (0.48)	43.90 (0.30)	45.10 (0.30)	45.64 (0.80)	43.90 (0.30)	22.32 (1.10)	30.58 (0.61)
80	64.20 (0.95)	64.42 (1.05)	64.22 (0.82)	61.50 (0.76)	61.50 (0.76)	60.26 (0.44)	58.66 (0.48)	60.34 (0.48)	60.70 (0.65)	58.66 (0.48)	29.66 (1.32)	40.94 (0.62)
100	79.50 (0.91)	79.56 (0.88)	79.72 (0.93)	76.70 (0.74)	76.70 (0.74)	75.42 (0.54)	73.58 (0.50)	75.42 (0.50)	75.68 (0.79)	73.58 (0.50)	37.42 (1.31)	51.02 (0.82)
200	155.92 (1.03)	155.90 (1.30)	155.86 (1.05)	152.24 (1.13)	152.24 (1.13)	150.34 (0.48)	147.62 (0.83)	151.38 (0.83)	150.48 (1.22)	147.62 (0.83)	74.90 (1.90)	101.08 (1.18)
300	232.10 (1.13)	231.74 (1.40)	232.02 (1.35)	227.48 (0.99)	227.48 (0.99)	225.54 (0.54)	221.60 (1.07)	227.40 (1.07)	225.30 (1.18)	221.60 (1.07)	113.24 (2.75)	151.66 (1.39)
400	307.42 (1.28)	306.72 (1.64)	307.26 (1.27)	302.52 (1.05)	302.52 (1.05)	300.50 (0.65)	295.34 (1.06)	303.66 (1.06)	300.22 (1.23)	295.34 (1.06)	149.76 (2.94)	201.70 (1.31)
500	383.42 (1.31)	381.58 (1.85)	382.88 (1.41)	377.64 (1.06)	377.64 (1.06)	375.48 (0.54)	369.56 (1.21)	379.44 (1.21)	375.00 (1.50)	369.56 (1.21)	186.90 (3.56)	252.76 (1.78)
600	458.64 (1.44)	456.76 (1.62)	458.18 (1.32)	452.56 (1.03)	452.56 (1.03)	450.48 (0.54)	443.86 (1.14)	455.14 (1.14)	449.90 (1.80)	443.86 (1.14)	223.80 (3.38)	302.68 (1.93)
700	534.62 (1.40)	531.98 (1.61)	533.62 (1.58)	527.56 (1.07)	527.56 (1.07)	525.54 (0.54)	517.72 (1.62)	531.28 (1.62)	524.22 (2.11)	517.72 (1.62)	261.48 (4.87)	352.70 (2.01)
800	610.64 (1.68)	606.40 (2.04)	609.58 (1.59)	603.04 (1.05)	603.04 (1.05)	600.46 (0.61)	591.60 (1.55)	607.40 (1.55)	599.46 (2.06)	591.60 (1.55)	299.86 (4.36)	402.84 (1.80)
900	686.30 (1.54)	681.44 (1.85)	684.66 (1.35)	677.88 (1.15)	677.88 (1.15)	675.68 (0.65)	665.50 (1.53)	683.52 (1.49)	674.34 (1.93)	665.48 (1.49)	337.80 (4.38)	453.56 (2.88)
1000	761.62 (1.63)	756.32 (1.93)	760.02 (1.29)	752.64 (1.16)	752.64 (1.16)	750.66 (0.59)	739.94 (1.53)	759.06 (1.53)	749.16 (2.53)	739.94 (1.53)	374.92 (4.27)	503.48 (2.57)

Table 21: Average Size of Maximum Induced Planar Subgraph on 4-regular graphs of size n produced by Bollobás algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	15.32 (0.51)	15.28 (0.45)	15.16 (0.47)	14.10 (0.51)	13.74 (0.53)	13.08 (0.27)	12.28 (0.50)	13.04 (0.20)	13.50 (0.58)	12.28 (0.50)	6.58 (0.67)	10.62 (0.57)
40	29.00 (0.53)	28.84 (0.55)	29.08 (0.60)	27.72 (0.57)	27.30 (0.65)	26.06 (0.51)	25.18 (0.44)	26.10 (0.42)	26.48 (0.58)	25.18 (0.44)	13.20 (1.05)	20.70 (0.58)
60	42.70 (0.71)	42.76 (0.87)	42.78 (0.76)	41.48 (0.65)	40.54 (0.73)	39.06 (0.47)	38.20 (0.64)	39.38 (0.60)	39.58 (0.67)	38.18 (0.66)	20.04 (1.32)	30.88 (0.77)
80	55.94 (0.96)	55.90 (0.84)	56.16 (0.68)	54.64 (0.66)	53.72 (0.73)	51.78 (0.68)	51.24 (0.62)	52.78 (0.65)	52.74 (0.78)	51.22 (0.65)	26.50 (1.27)	41.06 (0.91)
100	69.36 (0.80)	69.38 (0.85)	69.92 (0.78)	68.26 (0.72)	67.14 (0.86)	64.90 (0.71)	64.04 (0.70)	66.22 (0.58)	66.10 (0.76)	64.02 (0.71)	33.38 (1.72)	51.04 (1.11)
200	135.96 (1.07)	135.62 (1.21)	137.00 (0.73)	134.98 (0.71)	132.66 (1.02)	129.52 (0.99)	128.76 (1.02)	132.42 (0.88)	131.36 (1.06)	128.76 (1.02)	66.56 (2.05)	101.76 (1.25)
300	201.90 (1.02)	201.46 (1.36)	203.88 (0.90)	202.02 (0.71)	198.38 (1.16)	193.88 (1.15)	193.26 (1.21)	199.14 (1.11)	196.80 (1.29)	193.26 (1.21)	100.24 (2.45)	152.22 (1.75)
400	268.38 (1.16)	267.54 (1.33)	271.24 (1.00)	268.60 (0.81)	263.86 (1.26)	258.52 (1.22)	258.34 (1.29)	265.24 (1.02)	262.04 (1.47)	258.32 (1.32)	133.02 (3.03)	202.28 (1.91)
500	334.18 (1.47)	332.86 (1.97)	337.92 (0.92)	335.54 (0.84)	328.82 (1.67)	323.06 (1.46)	322.72 (2.03)	331.60 (1.63)	326.98 (2.16)	322.72 (2.03)	166.96 (3.42)	252.44 (2.15)
600	400.82 (1.47)	398.90 (1.67)	404.68 (0.94)	401.94 (0.82)	395.14 (1.73)	387.96 (1.82)	387.92 (1.81)	398.24 (1.22)	393.12 (1.79)	387.92 (1.81)	201.12 (4.14)	303.02 (2.15)
700	466.88 (1.55)	464.14 (1.84)	471.92 (1.12)	468.94 (0.79)	460.32 (1.54)	452.16 (1.74)	453.04 (1.84)	464.60 (1.65)	457.90 (2.50)	453.04 (1.84)	233.12 (3.91)	353.18 (2.06)
800	533.12 (1.61)	529.14 (2.66)	538.48 (1.03)	535.68 (1.04)	525.84 (1.67)	516.94 (1.92)	516.72 (2.42)	531.52 (1.79)	522.92 (2.49)	516.72 (2.42)	267.10 (4.67)	403.30 (2.10)
900	598.94 (1.60)	594.84 (2.32)	605.44 (1.05)	602.18 (0.90)	591.14 (1.59)	581.26 (1.84)	581.78 (2.37)	596.84 (1.92)	588.74 (2.58)	581.78 (2.37)	299.98 (4.52)	453.56 (2.11)

Table 22: Average Size of Maximum Induced Planar Subgraph on 5-regular graphs of size n produced by Bollobás algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	13.98 (0.47)	13.92 (0.40)	13.98 (0.51)	12.68 (0.51)	12.50 (0.65)	11.56 (0.58)	10.96 (0.40)	11.68 (0.51)	12.10 (0.36)	10.88 (0.39)	5.84 (0.58)	10.32 (0.47)
40	26.14 (0.64)	26.16 (0.58)	26.48 (0.61)	25.06 (0.47)	24.46 (0.73)	22.88 (0.59)	22.38 (0.70)	23.54 (0.58)	23.76 (0.82)	22.34 (0.69)	11.84 (0.96)	20.56 (0.64)
60	38.46 (0.86)	38.44 (0.91)	38.74 (0.60)	37.48 (0.65)	36.42 (0.81)	34.52 (0.74)	34.12 (0.69)	35.46 (0.73)	35.66 (0.87)	34.10 (0.68)	17.86 (1.40)	30.68 (0.71)
80	50.56 (0.81)	50.64 (0.85)	51.22 (0.71)	49.92 (0.80)	48.40 (0.97)	46.06 (0.71)	45.86 (0.67)	47.32 (0.68)	47.50 (0.68)	45.86 (0.67)	23.76 (1.67)	40.80 (0.67)
100	62.38 (0.92)	62.32 (1.04)	63.48 (0.91)	61.76 (0.87)	60.12 (0.85)	57.62 (1.16)	57.24 (0.92)	59.00 (0.83)	59.04 (1.01)	57.22 (0.91)	29.64 (1.27)	51.00 (0.70)
200	122.28 (1.16)	122.32 (1.42)	125.18 (0.98)	123.06 (1.00)	119.54 (1.27)	114.94 (1.32)	115.38 (1.52)	119.02 (1.15)	117.80 (1.43)	115.36 (1.56)	60.46 (2.33)	101.78 (1.47)

Table 23: Average Size of Maximum Induced Planar Subgraph on 6-regular graphs of size n produced by Bollobás algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	12.70	12.70	12.74	11.54	11.38	10.34	9.86	10.44	10.86	9.82	5.22	7.36
	(0.51)	(0.54)	(0.44)	(0.54)	(0.53)	(0.52)	(0.45)	(0.50)	(0.45)	(0.44)	(0.62)	(0.48)
40	24.04	23.96	24.28	22.98	22.42	20.74	20.28	21.24	21.62	20.18	10.60	14.44
	(0.81)	(0.81)	(0.57)	(0.59)	(0.67)	(0.78)	(0.67)	(0.59)	(0.70)	(0.75)	(0.81)	(0.61)
60	35.22	35.20	35.62	34.20	33.26	31.40	31.08	32.26	32.42	31.04	16.50	21.30
	(0.86)	(0.86)	(0.83)	(0.61)	(0.72)	(0.90)	(0.80)	(0.75)	(0.64)	(0.81)	(0.99)	(0.76)
80	46.30	46.36	47.22	45.74	44.16	41.74	41.90	43.26	43.48	41.90	21.58	28.14
	(0.86)	(0.83)	(0.84)	(0.85)	(0.98)	(0.88)	(0.84)	(0.94)	(0.93)	(0.84)	(1.55)	(0.81)

3.2 Tests on Graphs Generated By Steger-Wormald Method

Table 24: Average Size of Maximum Induced Planar Subgraph on 3-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	17.54 (0.68)	17.48 (0.61)	17.48 (0.61)	15.86 (0.61)	15.86 (0.61)	15.08 (0.27)	14.00 (0.00)	15.02 (0.14)	15.42 (0.54)	13.98 (0.14)	7.22 (0.71)	10.26 (0.44)
40	33.20 (0.81)	33.32 (0.82)	33.14 (0.67)	31.16 (0.58)	31.16 (0.58)	30.18 (0.39)	28.94 (0.24)	30.08 (0.27)	30.52 (0.58)	28.92 (0.27)	14.94 (0.98)	20.68 (0.62)
60	48.92 (0.99)	48.80 (0.99)	48.78 (0.82)	46.60 (0.76)	46.60 (0.76)	45.24 (0.48)	43.86 (0.35)	45.14 (0.35)	45.64 (0.60)	43.86 (0.35)	22.06 (1.17)	30.82 (0.72)
80	64.38 (0.78)	64.26 (1.01)	64.20 (0.88)	61.88 (0.82)	61.88 (0.82)	60.24 (0.43)	58.74 (0.44)	60.28 (0.50)	60.76 (0.74)	58.72 (0.50)	29.84 (1.40)	40.90 (0.79)
100	79.48 (0.93)	79.48 (0.97)	79.56 (0.88)	76.88 (0.92)	76.88 (0.92)	75.26 (0.44)	73.48 (0.54)	75.52 (0.54)	75.68 (0.77)	73.48 (0.54)	37.34 (1.49)	51.02 (0.89)
200	155.88 (1.21)	155.78 (1.31)	156.00 (1.18)	152.20 (0.93)	152.20 (0.93)	150.38 (0.57)	147.50 (0.65)	151.50 (0.65)	150.46 (0.93)	147.50 (0.65)	75.26 (2.17)	101.42 (1.11)
300	231.78 (1.31)	231.32 (1.33)	231.78 (1.39)	227.30 (0.97)	227.30 (0.97)	225.42 (0.54)	221.88 (0.92)	227.18 (0.90)	225.52 (1.01)	221.82 (0.90)	112.46 (2.48)	151.46 (1.18)
400	307.26 (1.31)	306.86 (1.48)	307.84 (1.08)	302.60 (1.23)	302.60 (1.23)	300.38 (0.53)	295.64 (1.12)	303.36 (1.12)	300.24 (0.94)	295.64 (1.12)	149.88 (3.05)	201.92 (1.75)
500	383.08 (1.16)	381.66 (2.02)	382.76 (1.35)	377.68 (1.11)	377.68 (1.11)	375.44 (0.58)	369.72 (1.50)	379.28 (1.50)	374.84 (1.58)	369.72 (1.50)	187.12 (3.38)	252.14 (1.64)
600	459.26 (1.71)	456.76 (1.97)	458.60 (1.31)	452.76 (1.24)	452.76 (1.24)	450.60 (0.61)	443.70 (1.31)	455.32 (1.28)	449.88 (1.91)	443.68 (1.28)	225.28 (4.59)	302.42 (1.92)
700	534.62 (1.63)	531.82 (1.75)	533.90 (1.43)	527.74 (1.03)	527.74 (1.03)	525.42 (0.61)	517.82 (1.41)	531.18 (1.41)	524.74 (1.83)	517.82 (1.41)	262.68 (4.53)	352.44 (1.72)
800	610.28 (1.53)	606.92 (2.17)	609.38 (1.50)	602.68 (1.17)	602.68 (1.17)	600.38 (0.60)	591.76 (1.53)	607.28 (1.58)	599.14 (2.39)	591.72 (1.58)	299.54 (4.43)	402.92 (2.19)
900	685.56 (1.58)	681.26 (2.42)	684.80 (1.43)	677.76 (1.22)	677.76 (1.22)	675.48 (0.58)	666.08 (1.78)	682.92 (1.78)	674.40 (2.04)	666.08 (1.78)	337.16 (4.23)	452.72 (2.27)

Table 25: Average Size of Maximum Induced Planar Subgraph on 3-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	761.66 (1.87)	756.74 (1.90)	759.56 (1.33)	753.18 (1.30)	753.18 (1.30)	750.62 (0.67)	740.12 (1.71)	758.90 (1.74)	748.66 (2.59)	740.10 (1.74)	374.88 (5.67)	502.80 (1.97)
2000	1520.75 (2.83)	1503.35 (2.28)	1513.20 (2.67)	1503.40 (0.99)	1503.40 (0.99)	1500.75 (0.85)	1480.45 (2.54)	1518.55 (2.54)	1497.30 (5.15)	1480.45 (2.54)	750.85 (6.25)	1004.80 (3.00)
3000	2279.80 (3.30)	2247.10 (2.75)	2264.75 (1.45)	2253.45 (1.28)	2253.45 (1.28)	2250.75 (0.55)	2220.45 (3.52)	2278.55 (3.52)	2245.95 (7.78)	2220.45 (3.52)	1119.20 (6.48)	1504.35 (3.27)
4000	3039.90 (3.34)	2991.90 (3.70)	3016.15 (2.32)	3003.30 (1.30)	3003.30 (1.30)	3000.65 (0.67)	2959.70 (3.42)	3039.30 (3.42)	2988.60 (13.66)	2959.70 (3.42)	1502.10 (10.50)	2005.15 (4.27)
5000	3798.45 (3.38)	3737.05 (4.80)	3766.95 (1.76)	3753.25 (0.91)	3753.25 (0.91)	3750.80 (0.77)	3701.65 (3.62)	3797.35 (3.62)	3738.55 (12.94)	3701.65 (3.62)	1877.35 (9.36)	2505.05 (4.84)
6000	4559.10 (4.60)	4480.95 (3.75)	4518.25 (2.34)	4503.30 (0.92)	4503.30 (0.92)	4500.90 (0.64)	4440.65 (4.70)	4558.35 (4.70)	4487.35 (16.07)	4440.65 (4.70)	2250.40 (12.47)	3007.15 (5.28)
7000	5317.30 (3.85)	5226.15 (4.85)	5268.70 (1.78)	5253.55 (1.19)	5253.55 (1.19)	5250.70 (0.66)	5182.45 (4.17)	5316.55 (4.17)	5234.15 (20.29)	5182.45 (4.17)	2625.00 (15.04)	3507.55 (6.70)
8000	6075.90 (6.07)	5966.55 (7.02)	6019.30 (2.23)	6004.60 (1.27)	6004.60 (1.27)	6000.50 (0.61)	5923.35 (6.23)	6075.65 (6.23)	5982.40 (21.67)	5923.35 (6.23)	2998.50 (12.03)	4007.65 (5.99)
9000	6837.15 (5.82)	6707.70 (5.81)	6770.05 (1.99)	6753.75 (1.12)	6753.75 (1.12)	6750.95 (0.69)	6662.25 (6.09)	6836.80 (6.11)	6721.60 (30.17)	6662.20 (6.11)	3376.80 (15.12)	4511.75 (8.48)
10000	7596.60 (5.50)	7454.05 (7.27)	7521.50 (2.09)	7504.05 (1.57)	7504.05 (1.57)	7500.90 (0.72)	7402.90 (5.73)	7596.10 (5.73)	7481.40 (27.83)	7402.90 (5.73)	3754.00 (16.08)	5009.55 (7.26)

Table 26: Average Size of Maximum Induced Planar Subgraph on 4-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	15.36 (0.56)	15.38 (0.57)	15.30 (0.46)	14.18 (0.48)	13.86 (0.57)	13.22 (0.42)	12.28 (0.45)	13.06 (0.37)	13.56 (0.61)	12.26 (0.44)	6.32 (0.82)	10.32 (0.47)
40	28.82 (0.69)	28.98 (0.74)	28.86 (0.57)	27.64 (0.53)	27.40 (0.53)	26.06 (0.51)	25.32 (0.51)	26.34 (0.48)	26.74 (0.49)	25.20 (0.49)	13.20 (1.07)	20.68 (0.62)
60	42.64 (0.63)	42.46 (0.71)	42.64 (0.72)	41.16 (0.58)	40.54 (0.71)	39.08 (0.67)	38.20 (0.49)	39.68 (0.59)	39.76 (0.69)	38.18 (0.52)	19.88 (1.21)	30.76 (0.85)
80	56.14 (0.95)	56.06 (1.02)	56.22 (0.58)	54.70 (0.68)	53.56 (0.73)	51.74 (0.60)	51.32 (0.71)	52.88 (0.56)	52.78 (0.74)	51.28 (0.70)	26.38 (1.32)	41.18 (0.92)
100	69.22 (0.89)	69.18 (0.92)	69.62 (0.75)	68.06 (0.71)	66.68 (0.94)	64.76 (0.89)	64.14 (0.78)	65.96 (0.78)	65.80 (0.70)	64.14 (0.78)	33.14 (1.51)	51.16 (0.79)
200	135.90 (0.97)	135.88 (1.10)	136.88 (0.85)	134.94 (0.77)	132.62 (1.03)	129.30 (0.97)	128.94 (1.17)	132.64 (0.90)	131.24 (1.06)	128.94 (1.17)	65.98 (2.39)	101.70 (1.43)
300	201.96 (1.12)	201.60 (1.11)	203.98 (0.91)	201.76 (0.77)	197.88 (1.08)	194.04 (1.12)	193.68 (1.04)	198.66 (1.26)	196.50 (1.11)	193.68 (1.04)	99.78 (2.92)	152.04 (1.60)
400	268.32 (1.06)	267.36 (1.48)	271.06 (1.04)	268.54 (0.79)	263.76 (1.35)	258.66 (1.35)	258.08 (1.61)	265.32 (1.25)	261.54 (1.53)	258.06 (1.60)	133.60 (3.25)	202.32 (2.00)
500	334.28 (1.33)	333.00 (1.53)	337.90 (1.04)	335.24 (0.77)	328.90 (1.53)	323.26 (1.56)	322.78 (1.75)	331.58 (1.21)	327.00 (2.00)	322.74 (1.80)	165.42 (3.39)	252.70 (1.98)
600	400.30 (1.34)	398.38 (1.88)	404.72 (1.07)	402.06 (0.87)	394.16 (1.54)	387.74 (1.65)	387.74 (1.82)	397.92 (1.56)	392.16 (2.16)	387.74 (1.82)	199.52 (3.80)	302.94 (2.24)
700	466.78 (1.52)	464.28 (1.96)	472.10 (0.97)	469.06 (1.04)	460.00 (1.70)	451.76 (1.88)	452.56 (1.89)	464.30 (1.73)	457.86 (1.88)	452.54 (1.85)	232.36 (3.44)	353.06 (2.43)
800	533.20 (1.92)	529.58 (1.89)	538.44 (1.11)	535.68 (0.87)	525.70 (1.64)	516.84 (2.14)	517.24 (1.94)	530.84 (1.83)	523.10 (2.32)	517.24 (1.94)	266.70 (4.18)	403.12 (2.53)
900	598.92 (1.84)	594.92 (2.27)	605.44 (1.03)	602.08 (0.88)	590.86 (1.88)	582.02 (2.00)	581.50 (2.60)	597.18 (1.66)	588.52 (3.14)	581.48 (2.60)	299.58 (4.42)	453.06 (2.45)

Table 27: Average Size of Maximum Induced Planar Subgraph on 4-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	665.34 (1.67)	661.24 (2.15)	672.22 (1.15)	668.98 (0.94)	656.34 (2.04)	646.24 (2.10)	647.18 (2.05)	663.60 (1.87)	654.30 (2.85)	647.18 (2.05)	333.40 (5.08)	503.10 (2.22)
2000	1329.10 (3.19)	1312.55 (3.73)	1339.00 (1.30)	1335.55 (0.76)	1310.25 (2.49)	1291.20 (2.78)	1292.70 (3.31)	1328.20 (3.38)	1308.80 (5.27)	1292.70 (3.31)	663.85 (7.28)	1004.60 (3.66)
3000	1992.00 (2.79)	1963.35 (3.73)	2006.85 (0.93)	2002.05 (1.15)	1963.15 (3.67)	1937.95 (3.65)	1939.65 (3.44)	1991.45 (2.76)	1958.20 (9.82)	1939.65 (3.44)	1000.75 (8.33)	1505.35 (4.37)
4000	2655.50 (4.44)	2613.65 (4.55)	2673.80 (1.32)	2668.95 (1.23)	2620.40 (2.58)	2582.25 (4.49)	2587.50 (3.78)	2654.80 (4.32)	2614.40 (8.71)	2587.35 (3.75)	1338.00 (9.23)	2008.25 (6.44)
5000	3321.05 (5.24)	3262.65 (4.93)	3340.50 (1.19)	3335.45 (1.39)	3272.50 (2.80)	3230.10 (3.24)	3232.10 (4.02)	3320.85 (5.32)	3258.70 (14.27)	3232.10 (4.02)	1667.90 (9.17)	2509.25 (6.21)
6000	3986.20 (5.12)	3915.50 (4.68)	4007.95 (1.61)	4002.10 (1.25)	3925.70 (3.80)	3874.80 (5.38)	3882.90 (4.27)	3985.95 (5.13)	3915.10 (14.88)	3882.85 (4.31)	1995.65 (12.34)	3009.85 (7.55)
7000	4648.95 (4.76)	4562.30 (5.17)	4674.70 (1.42)	4668.35 (1.18)	4581.20 (3.68)	4520.60 (5.72)	4526.85 (6.74)	4648.55 (5.12)	4575.75 (19.13)	4526.85 (6.74)	2335.80 (13.60)	3508.70 (6.17)
8000	5311.95 (6.94)	5213.70 (7.19)	5342.05 (1.54)	5335.05 (1.19)	5235.05 (5.38)	5169.45 (6.22)	5175.95 (7.56)	5311.85 (6.96)	5228.90 (20.56)	5175.95 (7.56)	2667.25 (12.48)	4011.50 (9.46)
9000	5975.00 (5.72)	5860.35 (8.37)	6008.35 (1.90)	6001.60 (1.39)	5887.05 (4.94)	5809.60 (7.22)	5821.15 (8.11)	5974.70 (5.89)	5875.90 (22.56)	5821.15 (8.11)	2998.00 (15.90)	4513.20 (8.81)
10000	6639.90 (6.41)	6512.45 (7.29)	6675.35 (1.63)	6667.90 (1.52)	6542.50 (4.76)	6457.30 (7.35)	6469.40 (5.80)	6639.80 (6.42)	6529.60 (24.90)	6469.40 (5.80)	3329.45 (15.43)	5010.00 (6.97)

Table 28: Average Size of Maximum Induced Planar Subgraph on 5-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	13.74 (0.44)	13.80 (0.45)	13.90 (0.51)	12.62 (0.53)	12.38 (0.53)	11.66 (0.48)	10.90 (0.42)	11.62 (0.53)	11.98 (0.47)	10.82 (0.48)	5.72 (0.81)	10.36 (0.48)
40	26.18 (0.69)	26.18 (0.83)	26.42 (0.67)	25.10 (0.58)	24.56 (0.67)	23.00 (0.57)	22.60 (0.67)	23.36 (0.56)	23.84 (0.79)	22.56 (0.67)	11.98 (1.02)	20.64 (0.53)
60	38.24 (0.80)	38.36 (0.69)	38.98 (0.71)	37.34 (0.63)	36.82 (0.75)	34.52 (0.81)	34.14 (0.70)	35.32 (0.74)	35.70 (0.81)	34.06 (0.84)	18.14 (1.18)	30.62 (0.70)
80	50.44 (0.79)	50.40 (0.95)	51.30 (0.71)	49.62 (0.73)	48.16 (1.00)	45.98 (0.87)	45.58 (0.86)	47.24 (0.89)	47.20 (0.90)	45.58 (0.86)	23.50 (1.62)	40.86 (0.88)
100	62.52 (0.97)	62.50 (1.07)	63.54 (0.84)	62.14 (0.95)	60.26 (0.92)	57.46 (0.95)	57.50 (1.16)	59.28 (0.76)	59.26 (1.12)	57.48 (1.15)	29.94 (1.25)	50.94 (0.79)
200	122.34 (1.33)	122.30 (1.18)	125.06 (0.93)	123.24 (1.12)	119.50 (1.43)	114.86 (1.14)	115.44 (1.28)	118.86 (1.16)	117.70 (1.23)	115.38 (1.35)	60.20 (2.19)	101.28 (1.28)
300	181.56 (1.49)	181.02 (1.67)	186.36 (1.14)	183.90 (1.43)	178.70 (1.25)	172.14 (1.25)	173.26 (1.43)	178.24 (1.39)	176.12 (1.45)	173.20 (1.44)	90.42 (2.69)	151.42 (0.97)
400	240.92 (1.56)	240.36 (1.70)	247.46 (1.45)	244.76 (1.36)	237.80 (1.39)	229.68 (1.77)	231.56 (1.76)	237.94 (1.75)	235.34 (1.72)	231.56 (1.76)	120.58 (2.71)	202.16 (1.57)
500	300.68 (1.83)	299.66 (2.18)	308.46 (1.34)	305.46 (1.69)	296.52 (1.85)	286.98 (1.66)	290.00 (2.36)	297.94 (1.71)	293.56 (2.14)	289.96 (2.41)	150.74 (3.21)	252.02 (1.56)
600	360.04 (2.07)	358.44 (2.05)	369.58 (1.28)	366.46 (1.64)	356.02 (1.77)	344.82 (2.02)	347.92 (2.12)	357.48 (2.25)	352.30 (2.25)	347.92 (2.12)	180.88 (4.18)	302.38 (2.22)
700	419.42 (1.96)	417.20 (2.22)	430.44 (1.83)	427.42 (1.76)	415.00 (2.32)	402.26 (2.56)	405.98 (2.48)	417.56 (2.04)	411.44 (2.32)	405.98 (2.48)	211.16 (4.07)	352.96 (1.87)
800	478.94 (2.11)	476.00 (2.22)	491.50 (1.61)	488.36 (2.03)	474.10 (2.30)	459.96 (2.71)	464.24 (2.45)	476.76 (2.25)	470.24 (2.31)	464.22 (2.43)	241.10 (4.87)	403.40 (2.61)
900	537.74 (2.17)	534.00 (3.06)	552.02 (1.76)	548.76 (2.09)	532.72 (2.56)	517.12 (3.49)	521.60 (2.60)	535.92 (2.35)	528.42 (3.26)	521.60 (2.60)	270.96 (4.75)	453.20 (2.44)

Table 29: Average Size of Maximum Induced Planar Subgraph on 5-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	598.22 (2.54)	593.62 (3.06)	613.04 (2.23)	609.42 (2.18)	591.72 (2.41)	574.58 (2.57)	579.68 (3.26)	596.54 (2.47)	587.44 (3.65)	579.68 (3.26)	302.12 (4.88)	503.30 (2.73)
2000	1193.40 (3.60)	1178.90 (4.13)	1222.15 (2.39)	1217.70 (2.39)	1179.20 (3.27)	1149.00 (4.33)	1160.10 (4.62)	1192.15 (3.20)	1173.30 (5.69)	1160.10 (4.62)	600.90 (6.41)	1004.10 (4.00)
3000	1788.90 (3.31)	1761.40 (5.35)	1829.65 (3.28)	1823.85 (3.39)	1770.95 (4.17)	1724.15 (4.66)	1740.15 (5.61)	1788.30 (3.06)	1755.25 (10.07)	1740.15 (5.61)	906.10 (9.89)	1504.85 (3.98)
4000	2383.70 (4.84)	2343.90 (5.32)	2439.35 (3.73)	2432.85 (4.13)	2359.35 (4.76)	2295.80 (5.64)	2318.65 (5.61)	2383.35 (4.98)	2344.75 (12.90)	2318.65 (5.61)	1203.15 (11.44)	2006.25 (3.81)
5000	2979.70 (4.67)	2928.10 (5.25)	3045.75 (4.01)	3039.15 (4.43)	2947.00 (5.06)	2871.90 (7.19)	2900.20 (5.87)	2979.45 (4.71)	2931.35 (12.47)	2900.20 (5.87)	1503.75 (13.00)	2506.10 (4.23)
6000	3576.65 (7.02)	3511.20 (6.66)	3654.40 (4.62)	3646.65 (3.30)	3536.05 (4.05)	3448.10 (7.19)	3479.90 (5.61)	3576.30 (7.12)	3519.35 (14.92)	3479.80 (5.57)	1803.95 (9.74)	3010.20 (6.95)
7000	4171.65 (6.07)	4094.95 (6.62)	4262.20 (4.69)	4254.15 (4.13)	4126.00 (6.24)	4020.55 (8.55)	4061.25 (7.52)	4171.20 (6.03)	4107.05 (17.01)	4061.25 (7.52)	2112.20 (13.72)	3506.10 (5.81)
8000	4771.70 (7.06)	4676.25 (7.68)	4868.05 (4.64)	4860.10 (4.56)	4713.80 (5.02)	4597.45 (10.54)	4640.65 (8.39)	4771.45 (7.22)	4695.10 (19.67)	4640.60 (8.37)	2411.35 (12.67)	4009.05 (6.84)
9000	5366.05 (8.39)	5259.70 (8.60)	5477.25 (4.20)	5469.00 (4.26)	5302.00 (3.68)	5169.95 (9.85)	5222.40 (7.82)	5365.75 (8.44)	5275.95 (25.35)	5222.35 (7.80)	2712.00 (16.51)	4509.10 (5.69)
10000	5965.05 (7.56)	5843.10 (9.98)	6086.00 (4.50)	6077.15 (5.34)	5891.45 (5.22)	5746.60 (10.00)	5804.05 (10.67)	5964.85 (7.70)	5861.90 (25.29)	5804.00 (10.70)	3011.95 (17.24)	5007.25 (4.76)

Table 30: Average Size of Maximum Induced Planar Subgraph on 6-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	12.64 (0.56)	12.64 (0.53)	12.76 (0.52)	11.50 (0.51)	11.20 (0.53)	10.50 (0.58)	9.82 (0.44)	10.28 (0.45)	10.90 (0.42)	9.78 (0.46)	5.18 (0.63)	7.32 (0.47)
40	23.92 (0.72)	23.90 (0.71)	24.28 (0.64)	23.10 (0.68)	22.22 (0.65)	20.84 (0.71)	20.50 (0.68)	21.28 (0.64)	21.76 (0.62)	20.44 (0.70)	10.66 (0.92)	14.36 (0.48)
60	35.14 (0.88)	35.32 (0.91)	35.68 (0.65)	34.18 (0.69)	33.34 (0.69)	31.02 (0.87)	31.00 (0.86)	32.36 (0.88)	32.48 (0.81)	30.98 (0.87)	16.26 (1.14)	21.40 (0.76)
80	46.32 (1.04)	46.22 (0.97)	47.14 (0.70)	45.52 (0.84)	44.62 (0.90)	41.74 (1.05)	41.92 (0.90)	43.28 (0.97)	43.44 (1.07)	41.86 (0.88)	21.94 (1.24)	28.02 (0.77)
100	56.96 (1.01)	57.06 (0.98)	58.28 (0.86)	56.88 (1.00)	55.26 (0.96)	52.04 (1.09)	52.10 (1.15)	53.64 (0.98)	53.82 (1.12)	52.06 (1.13)	27.76 (1.53)	35.06 (1.11)
200	111.84 (1.43)	111.74 (1.32)	114.90 (1.20)	112.94 (1.06)	109.62 (1.29)	104.32 (1.50)	105.26 (1.38)	108.28 (1.58)	107.28 (1.50)	105.20 (1.37)	55.16 (1.66)	68.98 (1.38)
300	166.32 (1.56)	165.94 (1.89)	171.24 (1.32)	169.06 (1.33)	163.50 (1.64)	156.10 (1.66)	158.44 (1.62)	163.16 (1.58)	160.96 (1.94)	158.42 (1.58)	82.58 (2.89)	102.96 (1.50)
400	220.00 (2.03)	219.46 (1.63)	227.22 (1.30)	224.72 (1.53)	217.36 (1.80)	207.94 (2.17)	210.92 (1.99)	217.10 (1.81)	214.22 (2.16)	210.92 (1.99)	110.70 (2.98)	136.34 (1.90)
500	274.18 (1.56)	272.94 (2.03)	283.26 (1.43)	280.62 (1.71)	271.96 (1.81)	260.82 (2.40)	263.70 (2.09)	270.96 (1.68)	267.58 (2.11)	263.70 (2.09)	138.44 (3.30)	170.96 (2.26)
600	328.62 (1.94)	327.48 (2.37)	339.24 (1.90)	336.24 (1.70)	325.38 (2.14)	312.66 (2.17)	317.36 (2.31)	326.14 (1.91)	321.60 (1.81)	317.32 (2.29)	165.14 (3.76)	204.16 (2.12)
700	382.84 (2.44)	380.30 (1.91)	394.98 (1.86)	391.86 (1.86)	380.42 (2.44)	365.26 (2.81)	369.58 (2.59)	380.20 (2.64)	375.00 (2.84)	369.56 (2.60)	193.32 (3.99)	238.20 (2.75)
800	436.78 (2.77)	434.54 (2.60)	451.42 (1.53)	448.20 (1.74)	434.00 (2.31)	416.14 (3.00)	422.88 (2.30)	434.38 (2.93)	428.60 (2.63)	422.88 (2.30)	220.66 (4.36)	272.02 (3.01)
900	490.74 (2.51)	487.70 (3.07)	507.20 (2.29)	503.58 (2.45)	487.48 (2.16)	469.68 (3.67)	475.70 (3.23)	488.68 (2.62)	481.84 (3.58)	475.62 (3.23)	247.62 (4.69)	305.54 (2.82)

Table 31: Average Size of Maximum Induced Planar Subgraph on 6-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	544.68 (3.08)	540.88 (3.42)	563.38 (1.93)	560.02 (2.19)	542.92 (2.41)	521.32 (3.44)	527.88 (3.65)	542.98 (3.10)	534.68 (4.14)	527.86 (3.60)	277.42 (5.06)	338.38 (3.40)
2000	1085.50 (4.41)	1072.75 (4.91)	1121.05 (2.35)	1116.95 (2.82)	1081.15 (3.18)	1042.40 (4.24)	1055.10 (4.61)	1084.90 (4.38)	1068.25 (6.32)	1055.10 (4.61)	553.45 (7.32)	674.80 (4.60)
3000	1630.30 (5.44)	1605.85 (4.39)	1681.90 (3.09)	1676.50 (3.15)	1621.80 (4.16)	1563.85 (5.88)	1585.20 (4.98)	1629.65 (5.20)	1597.55 (7.57)	1585.20 (4.98)	831.10 (7.63)	1008.80 (3.69)
4000	2175.00 (5.81)	2140.85 (8.32)	2240.30 (4.50)	2234.65 (4.11)	2161.85 (4.07)	2086.25 (5.21)	2115.70 (7.93)	2174.60 (6.13)	2140.75 (10.26)	2115.70 (7.93)	1103.00 (8.54)	1345.20 (5.73)
5000	2718.35 (6.26)	2671.10 (6.55)	2799.90 (4.20)	2793.05 (3.59)	2698.60 (5.33)	2604.85 (7.36)	2643.85 (7.62)	2718.05 (6.10)	2676.45 (13.12)	2643.80 (7.54)	1381.80 (10.45)	1680.55 (6.14)
6000	3264.00 (7.29)	3202.75 (6.26)	3356.85 (3.63)	3350.00 (4.03)	3240.15 (5.59)	3127.95 (7.70)	3171.05 (6.18)	3263.70 (7.45)	3210.25 (14.84)	3171.00 (6.26)	1660.15 (12.26)	2014.45 (8.26)
7000	3803.55 (6.16)	3733.85 (8.43)	3916.15 (5.52)	3908.75 (4.46)	3779.25 (4.99)	3648.40 (8.82)	3701.35 (8.41)	3803.00 (6.22)	3745.00 (15.40)	3701.35 (8.41)	1932.65 (11.16)	2351.50 (8.34)
8000	4349.90 (7.22)	4267.00 (8.23)	4474.90 (4.93)	4467.10 (5.28)	4320.75 (6.43)	4165.65 (10.03)	4233.55 (8.55)	4349.75 (7.20)	4273.70 (20.47)	4233.55 (8.55)	2213.20 (12.92)	2683.70 (10.22)
9000	4892.50 (6.60)	4793.10 (7.84)	5034.65 (5.46)	5026.20 (5.30)	4855.90 (8.94)	4685.90 (9.99)	4756.80 (9.96)	4892.30 (6.60)	4812.85 (20.33)	4756.75 (9.96)	2484.05 (11.58)	3022.75 (7.48)
10000	5436.45 (8.75)	5326.50 (11.61)	5588.85 (5.60)	5579.90 (5.60)	5396.50 (6.98)	5209.05 (9.59)	5288.85 (11.47)	5436.15 (8.83)	5343.45 (28.49)	5288.85 (11.47)	2763.80 (13.76)	3352.50 (13.59)

Table 32: Average Size of Maximum Induced Planar Subgraph on 7-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	11.70 (0.46)	11.72 (0.45)	11.92 (0.40)	10.58 (0.54)	10.28 (0.54)	9.44 (0.58)	8.96 (0.28)	9.50 (0.51)	10.02 (0.43)	8.86 (0.40)	4.76 (0.59)	7.26 (0.44)
40	22.18 (0.75)	22.16 (0.74)	22.66 (0.59)	21.04 (0.60)	20.62 (0.70)	19.02 (0.74)	18.80 (0.70)	19.42 (0.61)	20.04 (0.73)	18.76 (0.72)	10.06 (0.93)	14.24 (0.43)
60	32.42 (0.73)	32.38 (0.78)	33.14 (0.81)	31.68 (0.68)	30.70 (0.79)	28.50 (0.81)	28.42 (0.67)	29.48 (0.86)	29.66 (0.75)	28.36 (0.66)	14.92 (1.28)	21.28 (0.64)
80	42.74 (1.01)	42.78 (0.95)	43.82 (0.72)	42.24 (0.96)	41.02 (1.04)	38.12 (1.08)	38.56 (0.97)	39.76 (1.00)	40.00 (0.99)	38.52 (0.99)	20.36 (1.24)	28.24 (1.06)
100	52.84 (1.06)	52.78 (1.02)	54.18 (0.87)	52.58 (0.86)	50.90 (0.97)	47.38 (1.03)	48.00 (0.90)	49.54 (1.13)	49.70 (0.86)	47.98 (0.94)	25.44 (1.64)	34.90 (1.04)
200	103.38 (1.43)	103.10 (1.57)	106.42 (1.13)	104.20 (1.12)	101.40 (1.28)	95.12 (1.76)	97.04 (1.68)	100.04 (1.29)	99.02 (1.56)	97.00 (1.69)	50.64 (1.85)	68.88 (1.06)
300	153.24 (1.82)	153.12 (1.66)	158.62 (1.01)	156.36 (1.21)	151.30 (1.58)	143.10 (1.75)	145.68 (1.81)	149.96 (1.58)	148.50 (1.79)	145.62 (1.86)	75.80 (2.36)	102.98 (1.77)
400	203.32 (2.24)	202.88 (2.25)	210.50 (1.68)	207.76 (1.68)	201.62 (1.63)	191.02 (2.53)	194.68 (2.19)	200.14 (2.21)	197.76 (2.43)	194.58 (2.21)	101.70 (2.84)	136.78 (1.95)
500	252.76 (2.09)	252.04 (2.06)	262.62 (1.60)	259.80 (1.87)	251.72 (2.19)	240.00 (2.42)	243.16 (2.27)	249.66 (2.12)	246.88 (2.06)	243.16 (2.27)	127.02 (3.19)	170.34 (2.21)
600	302.74 (2.58)	301.66 (2.52)	314.20 (1.81)	311.34 (1.70)	301.34 (1.95)	287.30 (3.06)	291.88 (2.61)	300.04 (2.65)	296.02 (2.58)	291.84 (2.61)	152.70 (3.04)	204.08 (2.49)
700	353.02 (2.61)	351.36 (2.71)	366.02 (1.95)	363.08 (1.75)	352.00 (2.27)	335.62 (2.72)	340.58 (2.48)	350.30 (2.79)	345.74 (2.49)	340.50 (2.45)	179.32 (3.65)	238.60 (2.55)
800	403.34 (2.68)	401.44 (2.86)	418.30 (2.08)	414.92 (1.88)	402.54 (2.08)	383.40 (3.31)	390.20 (2.94)	401.00 (2.60)	395.32 (2.80)	390.16 (2.98)	204.92 (4.74)	271.64 (2.66)
900	453.04 (2.77)	450.08 (2.85)	470.12 (2.02)	466.80 (2.21)	451.50 (2.79)	430.28 (3.30)	438.24 (2.71)	451.02 (2.68)	444.48 (2.80)	438.24 (2.71)	229.74 (4.01)	306.76 (3.15)

Table 33: Average Size of Maximum Induced Planar Subgraph on 7-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	502.38 (2.59)	499.46 (2.59)	521.98 (2.30)	518.54 (2.76)	501.60 (2.94)	479.16 (3.41)	486.94 (2.75)	500.14 (2.76)	493.40 (3.16)	486.92 (2.75)	255.04 (5.66)	339.66 (3.44)
2000	1003.20 (3.64)	991.60 (2.96)	1038.95 (3.44)	1034.50 (3.49)	1001.10 (3.54)	956.35 (5.49)	974.60 (3.35)	1002.05 (3.94)	985.60 (5.62)	974.50 (3.17)	511.85 (8.12)	675.80 (4.46)
3000	1504.10 (5.53)	1484.90 (8.08)	1555.30 (3.34)	1549.40 (4.39)	1500.70 (5.18)	1437.40 (6.71)	1464.45 (7.43)	1503.45 (5.33)	1481.10 (10.08)	1464.45 (7.43)	767.55 (6.63)	1017.10 (6.30)
4000	2005.15 (5.95)	1973.60 (6.31)	2073.60 (4.19)	2067.30 (3.92)	2000.10 (5.73)	1914.20 (8.11)	1950.20 (6.61)	2004.75 (6.05)	1968.30 (10.68)	1950.20 (6.61)	1025.45 (9.17)	1351.75 (9.75)
5000	2507.75 (5.36)	2465.30 (6.42)	2590.20 (5.12)	2582.75 (4.55)	2502.75 (5.68)	2392.40 (5.76)	2439.05 (6.36)	2507.35 (5.29)	2469.25 (13.95)	2439.05 (6.36)	1279.90 (9.89)	1686.45 (8.95)
6000	3011.45 (6.74)	2956.75 (7.41)	3105.50 (4.77)	3097.75 (5.14)	3000.90 (7.36)	2874.25 (7.34)	2927.75 (6.80)	3011.15 (6.70)	2965.60 (11.49)	2927.75 (6.80)	1536.85 (11.17)	2024.85 (7.89)
7000	3505.80 (5.08)	3441.50 (8.17)	3623.25 (6.74)	3615.65 (6.79)	3497.40 (7.65)	3354.30 (10.75)	3410.90 (8.93)	3505.65 (5.22)	3443.20 (19.59)	3410.85 (8.86)	1790.75 (11.64)	2358.80 (8.28)
8000	4010.40 (6.62)	3932.30 (7.27)	4139.55 (5.58)	4131.50 (5.18)	3994.10 (4.40)	3828.25 (12.22)	3900.10 (6.87)	4010.15 (6.39)	3948.30 (18.13)	3900.10 (6.87)	2034.25 (9.66)	2694.20 (12.66)
9000	4514.30 (11.04)	4423.15 (10.19)	4655.95 (6.85)	4646.25 (8.24)	4496.00 (7.64)	4308.70 (10.12)	4387.20 (11.75)	4514.05 (10.97)	4438.70 (20.47)	4387.20 (11.75)	2296.00 (13.40)	3039.60 (16.60)
10000	5016.45 (9.30)	4915.85 (11.97)	5173.00 (7.57)	5162.90 (7.85)	4998.65 (8.09)	4784.55 (13.52)	4878.85 (13.07)	5016.25 (9.32)	4934.50 (28.25)	4878.85 (13.07)	2555.25 (12.82)	3374.15 (15.84)

Table 34: Average Size of Maximum Induced Planar Subgraph on 8-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	11.02 (0.38)	11.04 (0.35)	10.88 (0.39)	9.76 (0.48)	9.60 (0.53)	8.58 (0.50)	8.10 (0.46)	8.76 (0.52)	9.10 (0.42)	8.06 (0.47)	4.18 (0.60)	7.32 (0.47)
40	20.68 (0.62)	20.74 (0.66)	21.08 (0.49)	19.72 (0.67)	19.26 (0.72)	17.58 (0.67)	17.20 (0.57)	18.02 (0.68)	18.40 (0.61)	17.14 (0.64)	9.12 (1.04)	14.26 (0.49)
60	30.08 (0.85)	30.08 (0.78)	30.98 (0.68)	29.44 (0.67)	28.62 (0.83)	26.34 (0.96)	26.22 (0.74)	27.20 (0.93)	27.50 (0.81)	26.10 (0.81)	14.10 (1.02)	21.12 (0.66)
80	39.60 (0.90)	39.56 (0.88)	40.84 (0.65)	39.26 (0.78)	38.12 (0.85)	35.24 (1.08)	35.32 (0.87)	36.56 (0.93)	36.64 (1.06)	35.26 (0.96)	18.64 (1.40)	28.08 (0.85)
100	49.08 (1.19)	49.12 (1.15)	50.70 (0.86)	49.04 (0.95)	47.84 (0.93)	44.24 (1.10)	44.46 (1.23)	45.96 (1.14)	45.90 (1.07)	44.42 (1.30)	23.52 (1.39)	34.86 (0.95)
200	95.96 (1.62)	96.08 (1.55)	99.28 (1.14)	97.22 (1.27)	94.78 (1.17)	88.52 (1.27)	89.80 (1.76)	92.80 (1.58)	91.84 (1.80)	89.74 (1.75)	47.16 (1.95)	69.16 (1.40)
300	142.88 (1.79)	142.60 (1.78)	147.88 (1.30)	145.56 (1.49)	141.28 (1.84)	133.18 (1.84)	135.58 (1.74)	139.66 (1.57)	138.12 (1.71)	135.56 (1.74)	71.34 (2.70)	102.84 (1.58)
400	189.58 (2.03)	189.52 (1.88)	196.48 (1.49)	194.02 (1.36)	188.08 (2.20)	177.82 (2.56)	181.34 (1.98)	186.28 (1.92)	184.28 (1.94)	181.32 (1.96)	94.30 (3.16)	136.44 (1.59)
500	235.60 (2.29)	235.22 (2.49)	244.80 (1.48)	241.80 (1.77)	234.94 (2.02)	222.06 (2.70)	226.04 (2.47)	232.92 (2.34)	229.94 (2.32)	226.02 (2.46)	119.48 (3.53)	169.88 (2.29)
600	282.34 (2.19)	281.52 (2.14)	293.60 (1.88)	290.78 (1.80)	280.76 (2.35)	267.02 (2.39)	271.94 (2.30)	279.46 (2.24)	275.80 (2.69)	271.88 (2.32)	141.90 (3.62)	203.92 (2.35)
700	328.10 (2.89)	327.22 (2.77)	341.60 (1.75)	338.48 (1.94)	328.22 (2.26)	310.56 (3.10)	316.56 (2.66)	325.60 (2.69)	321.22 (2.64)	316.52 (2.67)	167.38 (4.05)	237.68 (2.39)
800	375.32 (3.21)	373.60 (3.64)	389.98 (2.08)	386.38 (2.02)	374.64 (2.93)	355.84 (3.42)	362.16 (3.69)	372.92 (3.16)	367.72 (3.49)	362.16 (3.69)	189.96 (4.54)	271.16 (2.57)
900	421.72 (2.93)	419.52 (3.12)	438.26 (2.26)	435.04 (2.04)	421.52 (2.98)	400.26 (3.66)	407.96 (3.37)	419.08 (3.16)	413.66 (3.07)	407.94 (3.36)	216.16 (4.83)	304.60 (2.63)

Table 35: Average Size of Maximum Induced Planar Subgraph on 8-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	468.40 (3.55)	465.04 (3.36)	486.90 (1.88)	483.38 (1.93)	468.64 (2.97)	443.70 (3.25)	452.80 (3.31)	466.58 (3.85)	459.18 (3.84)	452.80 (3.31)	238.50 (4.18)	338.18 (2.72)
2000	931.80 (4.70)	920.55 (3.63)	969.20 (2.86)	964.00 (2.96)	935.75 (3.46)	887.95 (6.20)	903.45 (3.38)	931.00 (4.67)	915.95 (6.03)	903.40 (3.36)	478.10 (4.87)	674.80 (4.80)
3000	1400.60 (4.72)	1381.05 (5.82)	1451.85 (2.81)	1445.65 (3.28)	1401.75 (4.54)	1332.25 (7.32)	1360.25 (6.21)	1400.05 (4.73)	1378.40 (7.59)	1360.25 (6.21)	712.65 (7.84)	1008.35 (5.90)
4000	1869.45 (6.30)	1838.50 (6.82)	1932.40 (3.19)	1925.75 (3.18)	1867.10 (5.67)	1780.80 (8.50)	1815.50 (6.98)	1868.60 (6.20)	1835.60 (14.14)	1815.50 (6.98)	953.05 (8.70)	1343.75 (6.43)
5000	2332.80 (7.08)	2292.95 (7.76)	2413.40 (4.96)	2405.65 (5.25)	2334.25 (6.62)	2221.15 (10.67)	2267.00 (7.00)	2332.40 (6.95)	2295.05 (10.67)	2267.00 (7.00)	1191.80 (9.32)	1677.50 (5.61)
6000	2798.90 (8.26)	2748.50 (8.44)	2894.10 (6.16)	2886.15 (5.71)	2799.75 (4.70)	2665.05 (9.26)	2720.80 (9.57)	2798.55 (8.41)	2745.95 (17.98)	2720.80 (9.57)	1431.10 (15.07)	2014.05 (9.24)
7000	3264.55 (6.14)	3206.60 (8.39)	3374.35 (6.21)	3365.20 (6.44)	3268.85 (6.82)	3113.75 (13.71)	3177.25 (6.82)	3264.25 (6.26)	3212.85 (14.38)	3177.20 (6.86)	1669.35 (17.20)	2347.40 (6.80)
8000	3731.25 (9.74)	3656.35 (8.21)	3858.95 (6.37)	3848.90 (5.47)	3731.20 (7.38)	3557.55 (12.88)	3624.65 (8.13)	3730.90 (9.68)	3673.95 (17.31)	3624.65 (8.13)	1907.30 (12.61)	2683.05 (9.18)
9000	4199.40 (6.69)	4118.20 (10.92)	4343.75 (5.84)	4333.45 (6.60)	4198.85 (6.50)	4000.60 (11.29)	4085.15 (9.92)	4199.05 (6.75)	4131.35 (17.26)	4085.15 (9.92)	2151.40 (13.26)	3016.60 (10.34)
10000	4668.40 (10.74)	4575.70 (10.34)	4822.00 (8.36)	4811.85 (8.60)	4664.65 (11.37)	4438.25 (13.29)	4539.85 (12.16)	4668.00 (10.57)	4596.15 (18.02)	4539.80 (12.12)	2379.05 (18.39)	3352.15 (9.82)

Table 36: Average Size of Maximum Induced Planar Subgraph on 9-regular graphs of size n produced by Steger-Wormald algorithm.

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
20	10.08 (0.34)	10.08 (0.34)	10.22 (0.46)	9.06 (0.42)	8.80 (0.61)	7.90 (0.51)	7.50 (0.51)	7.94 (0.42)	8.48 (0.50)	7.40 (0.49)	4.02 (0.55)	5.72 (0.50)
40	19.40 (0.70)	19.28 (0.61)	19.90 (0.51)	18.48 (0.68)	18.00 (0.73)	16.34 (0.72)	16.08 (0.72)	16.84 (0.74)	17.24 (0.72)	16.06 (0.74)	8.54 (0.79)	11.02 (0.65)
60	28.48 (0.93)	28.48 (0.93)	28.88 (0.75)	27.44 (0.76)	26.88 (0.82)	24.52 (0.91)	24.58 (0.93)	25.58 (0.78)	25.94 (0.93)	24.56 (0.93)	12.80 (1.20)	16.56 (0.64)
80	37.36 (0.88)	37.24 (0.82)	38.34 (0.96)	36.70 (0.95)	35.82 (0.98)	32.94 (1.13)	33.20 (0.90)	34.38 (0.95)	34.54 (0.91)	33.12 (0.92)	17.68 (1.50)	21.78 (1.00)
100	46.36 (0.96)	46.40 (0.97)	47.60 (0.73)	46.08 (0.99)	44.42 (0.95)	41.08 (1.23)	41.68 (1.00)	43.10 (1.11)	43.24 (0.85)	41.66 (0.98)	21.68 (1.28)	26.96 (1.01)
200	90.26 (1.44)	90.12 (1.32)	93.38 (1.32)	91.14 (1.32)	88.82 (1.49)	82.64 (1.88)	84.02 (1.44)	86.58 (1.59)	85.90 (1.25)	83.92 (1.45)	44.18 (2.17)	52.86 (1.29)
300	133.82 (1.69)	133.62 (1.66)	138.94 (1.57)	136.68 (1.39)	133.20 (1.85)	123.98 (2.00)	126.72 (1.67)	130.38 (1.97)	129.14 (1.64)	126.68 (1.62)	67.84 (1.97)	78.36 (1.43)
400	177.34 (2.07)	176.94 (2.22)	184.54 (2.12)	182.04 (1.92)	176.86 (1.99)	165.60 (2.29)	168.60 (2.17)	174.06 (1.97)	171.84 (2.06)	168.58 (2.17)	88.48 (2.92)	104.20 (1.90)
500	220.86 (1.98)	220.58 (2.06)	230.30 (1.81)	227.72 (1.77)	220.76 (2.22)	207.22 (2.37)	211.52 (2.35)	218.10 (2.04)	214.46 (2.53)	211.48 (2.32)	111.28 (3.13)	129.84 (2.20)
600	264.44 (3.23)	263.80 (3.19)	275.30 (1.71)	271.90 (1.92)	264.64 (2.03)	248.62 (3.36)	254.02 (3.18)	261.72 (3.15)	258.22 (3.16)	253.98 (3.18)	133.88 (3.71)	154.64 (2.14)
700	308.52 (2.12)	307.16 (2.52)	320.84 (1.83)	317.60 (2.00)	309.06 (2.33)	289.72 (3.26)	296.80 (2.74)	305.86 (2.15)	301.50 (3.11)	296.78 (2.76)	156.02 (3.74)	180.66 (2.77)
800	352.22 (2.96)	350.30 (2.81)	366.16 (2.29)	362.74 (2.16)	351.82 (2.81)	332.44 (3.12)	339.88 (3.07)	349.74 (3.00)	344.62 (3.16)	339.88 (3.07)	177.86 (4.61)	205.36 (2.46)
900	395.04 (2.51)	393.04 (2.91)	410.72 (2.58)	407.20 (2.42)	396.72 (2.64)	374.00 (3.02)	381.70 (3.16)	392.62 (2.64)	387.46 (2.94)	381.68 (3.20)	202.38 (3.94)	231.28 (2.81)

Table 37: Average Size of Maximum Induced Planar Subgraph on 9-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	438.24 (2.83)	436.20 (3.08)	456.56 (2.41)	452.60 (2.39)	439.42 (2.97)	415.58 (3.56)	424.40 (3.29)	436.00 (2.94)	430.08 (3.34)	424.38 (3.26)	223.60 (4.37)	256.16 (3.33)
2000	874.20 (4.77)	866.05 (4.14)	909.60 (3.70)	904.35 (4.04)	879.45 (2.78)	832.60 (5.56)	849.90 (3.86)	873.10 (4.87)	862.00 (5.49)	849.80 (3.79)	448.65 (6.12)	511.40 (3.23)
3000	1308.50 (6.14)	1291.45 (5.59)	1361.95 (4.11)	1355.30 (3.60)	1316.85 (5.24)	1246.65 (7.19)	1272.40 (6.33)	1307.85 (6.09)	1288.75 (5.75)	1272.40 (6.33)	673.20 (6.84)	763.35 (5.00)
4000	1747.90 (7.70)	1720.80 (6.01)	1814.15 (5.04)	1806.95 (5.03)	1753.45 (7.25)	1661.05 (9.12)	1699.50 (5.84)	1747.25 (7.40)	1723.05 (8.31)	1699.45 (5.86)	897.00 (9.34)	1016.80 (7.60)
5000	2181.90 (7.46)	2150.25 (7.03)	2267.15 (5.00)	2258.85 (4.55)	2192.15 (5.73)	2073.00 (7.66)	2125.95 (6.89)	2180.80 (7.55)	2146.90 (11.31)	2125.95 (6.89)	1121.60 (10.77)	1274.90 (10.66)
6000	2620.85 (6.75)	2574.85 (10.49)	2718.30 (6.97)	2709.55 (6.89)	2630.10 (7.05)	2488.60 (9.96)	2547.30 (10.13)	2620.30 (6.50)	2573.05 (15.14)	2547.30 (10.13)	1339.20 (12.58)	1521.15 (8.46)
7000	3058.75 (8.14)	3001.60 (7.56)	3167.45 (8.08)	3158.00 (7.60)	3064.65 (7.10)	2905.45 (10.28)	2972.95 (8.30)	3058.50 (8.31)	3004.45 (14.49)	2972.95 (8.30)	1560.05 (11.39)	1778.80 (11.38)
8000	3495.35 (5.95)	3427.60 (8.74)	3621.45 (6.63)	3611.00 (6.19)	3505.90 (8.32)	3324.40 (10.63)	3396.05 (9.36)	3495.10 (5.84)	3440.10 (16.90)	3395.95 (9.39)	1793.00 (8.65)	2028.55 (10.17)
9000	3930.75 (6.46)	3857.50 (8.76)	4071.70 (6.84)	4061.35 (6.99)	3946.35 (9.07)	3739.95 (12.51)	3823.40 (8.92)	3930.70 (6.47)	3864.20 (23.00)	3823.35 (8.89)	2014.75 (15.09)	2283.35 (13.41)
10000	4372.35 (8.11)	4285.30 (9.98)	4525.55 (6.12)	4514.95 (6.58)	4380.05 (7.32)	4151.20 (15.70)	4250.55 (10.37)	4372.25 (8.08)	4300.05 (20.43)	4250.55 (10.37)	2237.40 (11.85)	2537.25 (12.85)

3.3 Tests on Graphs Generated by the Classical Method

Table 38: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 3 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VR	VA	PT	OP1	OP2	T	IS	HL
20	18.64 (1.05)	18.62 (1.07)	18.60 (1.11)	17.80 (1.14)	16.82 (1.38)	16.14 (1.29)	16.92 (1.26)	17.18 (1.22)	16.12 (1.32)	9.90 (1.27)	8.76 (1.71)
40	36.18 (1.45)	36.10 (1.47)	36.24 (1.42)	35.38 (1.59)	33.46 (1.82)	33.06 (1.80)	34.10 (1.52)	34.38 (1.61)	33.02 (1.79)	19.94 (1.36)	15.40 (2.05)
60	53.60 (1.84)	53.46 (1.95)	53.58 (1.68)	52.62 (1.84)	50.20 (2.00)	49.94 (2.06)	51.22 (1.84)	51.36 (1.82)	49.88 (2.10)	29.84 (1.90)	21.42 (2.52)
80	71.16 (2.14)	71.14 (2.18)	71.24 (2.08)	70.28 (2.06)	67.38 (2.33)	67.24 (2.43)	69.02 (2.10)	68.92 (2.22)	67.22 (2.48)	40.34 (2.51)	28.50 (2.43)
100	88.14 (2.33)	87.84 (2.35)	88.32 (2.56)	87.22 (2.76)	83.54 (2.97)	83.60 (2.76)	85.88 (2.58)	85.44 (2.62)	83.52 (2.73)	50.14 (2.53)	34.28 (3.53)
200	173.92 (3.78)	173.60 (3.61)	174.98 (3.42)	173.52 (3.67)	167.50 (4.25)	168.16 (3.99)	171.60 (3.69)	170.42 (3.87)	168.14 (3.98)	101.96 (3.94)	62.58 (7.27)
300	260.86 (4.45)	259.94 (4.88)	262.18 (4.12)	260.62 (4.14)	252.10 (5.16)	253.16 (4.97)	258.68 (4.53)	255.76 (4.65)	253.12 (4.98)	152.86 (5.20)	88.58 (10.97)
400	345.08 (4.37)	343.76 (4.52)	347.12 (4.47)	345.16 (4.51)	334.70 (5.43)	336.38 (4.65)	343.48 (4.11)	339.72 (4.58)	336.34 (4.67)	203.10 (5.50)	116.12 (13.28)
500	432.94 (5.46)	430.40 (5.33)	434.38 (5.03)	432.66 (5.22)	419.92 (5.57)	421.80 (5.37)	431.50 (5.54)	425.70 (5.22)	421.66 (5.29)	255.46 (6.79)	146.84 (15.64)
600	519.36 (5.73)	516.56 (5.74)	521.64 (4.91)	519.54 (5.18)	503.54 (6.48)	508.00 (5.61)	517.72 (5.66)	511.94 (5.57)	507.86 (5.58)	305.88 (6.48)	167.92 (12.20)
700	607.20 (5.38)	602.82 (6.22)	609.34 (5.51)	607.16 (5.66)	589.34 (6.26)	593.64 (6.49)	606.12 (5.51)	598.56 (6.50)	593.42 (6.70)	358.26 (6.75)	193.28 (14.14)
800	692.18 (6.83)	686.60 (6.89)	694.20 (6.72)	691.88 (6.57)	672.70 (8.05)	676.76 (7.13)	691.04 (6.95)	681.82 (6.81)	676.68 (7.17)	408.18 (7.90)	219.74 (11.51)
900	778.46 (8.00)	771.88 (7.83)	781.10 (7.23)	778.60 (7.69)	756.40 (8.59)	761.38 (8.01)	777.70 (7.84)	767.32 (7.96)	761.16 (8.00)	458.20 (8.57)	244.24 (20.51)

Table 39: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 3 produced by the classical method (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	865.10 (6.00)	858.64 (6.68)	867.64 (5.72)	865.24 (5.80)	863.00 (6.07)	840.40 (8.27)	846.94 (6.64)	864.34 (6.00)	853.20 (6.42)	846.74 (6.63)	511.22 (7.00)	273.04 (9.38)
2000	1729.95 (9.13)	1709.85 (9.98)	1731.95 (9.91)	1728.50 (10.25)	1723.35 (10.93)	1682.15 (11.67)	1692.90 (11.06)	1729.65 (9.24)	1703.75 (10.17)	1692.50 (11.22)	1016.15 (11.87)	542.30 (20.80)
3000	2590.70 (11.21)	2558.75 (13.87)	2592.60 (11.51)	2588.85 (11.30)	2580.60 (11.87)	2518.35 (13.90)	2539.60 (14.33)	2590.25 (11.10)	2553.55 (14.62)	2538.80 (14.27)	1527.95 (13.10)	805.40 (36.76)
4000	3459.45 (13.57)	3411.75 (15.66)	3460.10 (13.78)	3454.90 (13.27)	3445.85 (14.20)	3363.55 (15.20)	3389.55 (16.04)	3459.25 (13.42)	3410.90 (16.34)	3388.75 (16.31)	2041.05 (15.68)	1044.40 (67.83)
5000	4308.85 (13.45)	4250.40 (15.92)	4310.35 (13.53)	4305.40 (13.55)	4292.60 (13.03)	4189.65 (16.20)	4224.80 (16.21)	4308.80 (13.52)	4248.95 (15.26)	4223.60 (16.07)	2545.15 (17.86)	1304.00 (90.77)
6000	5183.25 (18.28)	5105.95 (18.52)	5180.20 (17.05)	5174.95 (17.51)	5159.95 (18.33)	5039.75 (19.73)	5076.60 (19.78)	5183.10 (18.33)	5111.45 (17.97)	5075.40 (19.94)	3064.40 (29.49)	1530.30 (104.01)
7000	6037.30 (18.18)	5947.40 (22.94)	6035.50 (19.10)	6030.05 (19.03)	6011.75 (19.51)	5873.60 (21.82)	5917.75 (22.76)	6037.00 (18.24)	5957.10 (26.79)	5915.90 (22.49)	3567.90 (21.83)	1837.90 (120.06)
8000	6900.40 (21.67)	6798.80 (24.64)	6898.30 (22.77)	6892.55 (22.71)	6872.55 (21.82)	6710.05 (22.19)	6764.05 (24.24)	6900.35 (21.72)	6802.85 (25.27)	6762.35 (24.60)	4074.95 (21.20)	2092.75 (162.99)
9000	7768.20 (23.13)	7649.00 (22.75)	7763.10 (23.82)	7756.55 (22.99)	7734.05 (22.59)	7552.30 (28.15)	7613.40 (24.94)	7768.15 (23.17)	7664.65 (25.91)	7611.15 (25.00)	4587.65 (30.72)	2272.40 (171.41)
10000	8627.30 (26.31)	8493.70 (25.88)	8622.75 (23.98)	8615.90 (23.86)	8589.50 (24.60)	8387.25 (31.30)	8453.55 (26.99)	8627.25 (26.41)	8505.65 (32.72)	8451.30 (26.91)	5091.05 (21.97)	2495.35 (182.88)

Table 40: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 4 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VR	VA	PT	OP1	OP2	T	IS	HL
20	17.14 (1.05)	17.08 (1.07)	17.14 (1.01)	16.24 (1.12)	15.10 (1.27)	14.50 (1.15)	15.22 (1.13)	15.64 (1.17)	14.48 (1.16)	8.72 (1.05)	7.68 (0.96)
40	33.10 (1.34)	32.96 (1.28)	33.06 (1.17)	31.94 (1.25)	29.78 (1.36)	29.60 (1.20)	30.82 (1.40)	30.94 (1.30)	29.58 (1.23)	17.68 (1.60)	13.86 (1.85)
60	48.78 (2.16)	48.74 (2.17)	48.74 (1.95)	47.82 (2.08)	44.94 (2.72)	44.90 (2.26)	46.48 (2.19)	46.22 (2.11)	44.80 (2.34)	26.60 (2.43)	19.00 (2.79)
80	64.74 (2.43)	64.66 (2.57)	65.00 (2.42)	63.82 (2.49)	59.96 (2.93)	60.54 (2.43)	62.38 (2.56)	62.24 (2.49)	60.38 (2.48)	35.84 (2.26)	25.12 (3.78)
100	80.30 (2.02)	80.14 (2.24)	80.68 (1.95)	79.18 (2.00)	74.94 (2.65)	75.62 (2.08)	77.64 (2.16)	77.38 (2.18)	75.58 (2.11)	44.34 (2.34)	29.14 (3.34)
200	157.64 (3.44)	157.00 (3.77)	158.46 (3.42)	156.94 (3.42)	149.16 (3.99)	150.70 (3.73)	155.26 (3.40)	153.02 (3.61)	150.54 (3.84)	88.94 (3.50)	54.78 (5.54)
300	235.52 (3.39)	234.74 (3.52)	237.32 (3.47)	235.52 (3.58)	223.96 (4.15)	227.44 (3.43)	233.42 (3.35)	230.52 (3.42)	227.14 (3.49)	134.72 (3.45)	79.42 (5.01)
400	314.40 (4.86)	312.72 (4.97)	316.56 (4.43)	314.78 (4.33)	300.12 (5.13)	304.26 (5.33)	312.74 (4.53)	308.26 (4.96)	303.96 (5.50)	179.48 (5.38)	104.88 (7.92)
500	391.74 (5.90)	388.86 (5.54)	394.32 (5.68)	392.40 (5.61)	374.52 (6.52)	379.74 (6.26)	390.44 (6.15)	384.26 (6.13)	379.24 (6.27)	223.76 (5.55)	127.82 (9.81)
600	470.82 (6.20)	467.04 (6.95)	474.04 (6.56)	471.70 (6.64)	450.90 (7.80)	457.06 (6.83)	469.42 (6.38)	462.34 (6.91)	456.66 (6.83)	268.84 (6.56)	153.08 (12.48)
700	546.62 (6.23)	542.50 (6.60)	550.48 (6.36)	548.16 (6.26)	523.26 (7.08)	531.62 (6.95)	545.54 (6.15)	537.28 (6.87)	531.16 (7.17)	312.86 (7.02)	178.90 (13.39)
800	624.26 (6.11)	618.44 (7.59)	628.46 (6.37)	626.06 (6.49)	598.04 (7.86)	606.96 (7.60)	623.32 (6.17)	612.98 (7.45)	606.38 (7.92)	357.58 (6.24)	199.72 (17.07)
900	705.30 (7.86)	698.46 (7.49)	709.24 (7.26)	706.82 (7.44)	675.38 (8.22)	686.16 (7.72)	704.42 (7.88)	693.56 (7.80)	685.44 (7.86)	405.28 (7.96)	220.78 (18.73)

Table 41: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 4 produced by the classical method (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	783.36 (7.20)	775.74 (7.46)	787.70 (7.08)	784.72 (6.70)	781.16 (6.82)	751.66 (8.12)	762.32 (6.84)	782.54 (7.39)	769.98 (7.28)	761.58 (6.84)	449.04 (8.21)	247.78 (20.03)
2000	1564.50 (16.40)	1542.85 (15.63)	1570.65 (14.49)	1567.60 (14.75)	1559.50 (15.32)	1501.35 (18.66)	1523.40 (16.20)	1564.25 (16.33)	1539.15 (15.47)	1522.20 (16.36)	898.80 (12.88)	466.50 (30.42)
3000	2340.75 (14.73)	2304.95 (15.67)	2347.60 (13.59)	2343.95 (13.48)	2332.65 (14.76)	2245.50 (18.12)	2281.50 (14.75)	2340.50 (14.54)	2305.10 (17.22)	2279.35 (14.85)	1345.05 (12.06)	694.30 (33.70)
4000	3124.95 (13.16)	3072.35 (16.24)	3130.10 (13.57)	3125.15 (13.56)	3111.35 (14.57)	2999.75 (17.36)	3042.00 (16.72)	3124.75 (13.17)	3072.15 (14.71)	3038.70 (16.70)	1794.50 (17.80)	912.75 (26.53)
5000	3906.30 (13.83)	3837.40 (12.73)	3912.05 (13.72)	3905.95 (13.43)	3888.20 (13.72)	3745.95 (18.89)	3804.50 (13.81)	3906.20 (13.93)	3842.50 (14.81)	3800.70 (14.49)	2239.65 (11.38)	1139.90 (35.90)
6000	4687.25 (18.78)	4599.75 (20.21)	4692.25 (19.50)	4685.90 (19.33)	4663.65 (20.31)	4492.85 (21.51)	4562.20 (20.70)	4687.10 (18.85)	4605.35 (24.05)	4557.75 (20.60)	2691.50 (19.89)	1374.70 (35.60)
7000	5472.00 (19.24)	5375.20 (19.63)	5481.10 (17.25)	5475.10 (17.09)	5449.50 (18.40)	5251.55 (22.79)	5334.70 (20.77)	5471.90 (19.24)	5384.70 (17.42)	5328.80 (21.04)	3147.20 (17.03)	1590.75 (58.02)
8000	6259.30 (24.55)	6142.20 (25.11)	6264.90 (23.08)	6258.75 (22.91)	6228.55 (23.88)	6004.10 (27.45)	6096.75 (23.15)	6259.15 (24.49)	6152.00 (26.74)	6090.25 (23.61)	3584.70 (22.37)	1815.95 (72.54)
9000	7040.40 (20.10)	6905.55 (18.39)	7047.50 (16.05)	7041.50 (16.16)	7007.15 (15.80)	6759.60 (19.26)	6857.25 (17.26)	7040.15 (20.05)	6923.95 (21.81)	6850.45 (18.64)	4041.70 (18.15)	2045.55 (87.59)
10000	7818.40 (30.21)	7668.05 (32.81)	7828.20 (29.72)	7821.65 (29.85)	7782.75 (31.29)	7507.95 (36.34)	7616.80 (33.32)	7818.40 (30.21)	7686.10 (33.14)	7610.10 (33.72)	4489.25 (27.79)	2268.10 (86.53)

Table 42: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 5 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	15.62 (1.07)	15.56 (1.13)	15.66 (1.02)	14.68 (1.19)	14.66 (1.17)	13.28 (1.33)	12.98 (1.20)	13.72 (1.16)	14.04 (1.03)	12.84 (1.23)	7.80 (1.07)	6.92 (1.16)
40	30.50 (1.80)	30.34 (1.84)	30.54 (1.76)	29.58 (1.75)	29.40 (1.68)	26.88 (2.02)	27.06 (1.72)	28.20 (1.85)	28.40 (1.75)	26.96 (1.81)	16.10 (1.59)	12.42 (1.67)
60	44.68 (1.63)	44.48 (1.53)	44.98 (1.42)	43.76 (1.53)	43.70 (1.59)	40.30 (1.83)	40.72 (1.37)	42.42 (1.47)	42.40 (1.48)	40.56 (1.49)	23.98 (1.22)	17.22 (2.08)
80	58.34 (1.72)	58.22 (1.83)	58.76 (1.86)	57.50 (1.96)	57.32 (2.05)	52.78 (2.32)	53.90 (2.13)	56.08 (1.88)	55.52 (2.14)	53.74 (2.24)	31.32 (2.03)	21.54 (1.90)
100	73.74 (2.44)	73.46 (2.52)	74.26 (2.41)	72.84 (2.46)	72.56 (2.67)	68.16 (3.15)	68.96 (2.63)	71.14 (2.70)	70.58 (2.56)	68.80 (2.63)	40.30 (2.29)	27.18 (3.17)
200	144.20 (3.42)	143.46 (3.66)	145.88 (3.25)	144.62 (3.14)	143.68 (3.35)	135.26 (3.52)	137.30 (3.65)	142.18 (3.55)	139.80 (3.75)	136.94 (3.72)	80.78 (3.37)	49.44 (5.11)
300	215.62 (3.66)	214.32 (3.80)	218.06 (3.55)	216.36 (3.66)	215.00 (3.88)	202.84 (4.80)	206.98 (4.21)	213.58 (3.75)	210.20 (3.98)	206.22 (4.50)	121.04 (4.18)	72.06 (6.40)
400	285.78 (4.81)	283.56 (4.69)	289.28 (4.62)	287.22 (4.82)	285.92 (5.08)	269.70 (5.78)	274.96 (4.87)	284.46 (5.03)	279.44 (4.87)	274.00 (4.99)	160.66 (4.69)	92.14 (9.05)
500	355.42 (5.68)	352.32 (5.35)	360.08 (5.24)	357.62 (5.38)	355.34 (5.83)	336.68 (6.63)	342.76 (5.52)	354.14 (5.86)	348.04 (5.50)	341.70 (5.46)	200.64 (4.58)	116.00 (7.76)
600	429.00 (6.19)	424.76 (6.58)	433.66 (5.91)	431.42 (6.14)	428.98 (6.23)	407.00 (7.22)	413.92 (6.79)	427.82 (6.17)	419.86 (7.02)	412.66 (6.94)	243.12 (6.08)	136.60 (5.93)
700	499.44 (5.29)	494.38 (5.39)	504.96 (4.58)	502.48 (4.60)	499.48 (5.09)	474.34 (5.93)	482.90 (5.53)	498.82 (5.29)	489.16 (5.50)	481.06 (5.60)	282.24 (4.94)	157.80 (9.17)
800	570.72 (6.40)	563.94 (6.56)	576.02 (6.09)	573.32 (6.33)	570.40 (6.22)	540.08 (7.69)	551.28 (6.73)	570.00 (6.22)	559.76 (6.61)	549.58 (6.84)	323.68 (6.34)	177.82 (9.19)
900	639.30 (7.92)	631.38 (7.67)	645.66 (7.08)	642.84 (7.10)	639.16 (7.33)	606.74 (7.72)	618.00 (7.81)	638.74 (7.71)	626.98 (7.50)	616.12 (8.23)	361.90 (6.87)	197.60 (11.44)

Table 43: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 5 produced by the classical method (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	712.58 (7.31)	703.04 (7.48)	719.60 (7.39)	716.76 (7.36)	712.32 (6.92)	675.88 (8.03)	689.26 (7.88)	712.06 (7.40)	698.80 (7.90)	687.12 (8.08)	404.14 (7.05)	220.72 (12.09)
2000	1429.95 (11.03)	1404.65 (11.01)	1436.45 (9.61)	1432.60 (9.55)	1425.00 (9.26)	1357.25 (11.20)	1384.45 (11.42)	1429.80 (11.11)	1402.60 (10.83)	1379.65 (12.50)	808.50 (10.47)	435.35 (22.65)
3000	2138.00 (13.88)	2095.90 (14.33)	2148.85 (12.66)	2144.35 (13.30)	2131.10 (12.81)	2028.95 (16.76)	2068.05 (14.50)	2137.70 (14.08)	2094.95 (14.90)	2060.00 (13.87)	1208.65 (12.12)	630.60 (43.89)
4000	2849.45 (10.76)	2790.40 (13.00)	2864.40 (10.16)	2858.90 (10.46)	2840.45 (8.94)	2709.00 (14.21)	2757.00 (12.30)	2849.40 (10.85)	2793.00 (12.64)	2746.70 (13.45)	1610.20 (14.60)	832.30 (47.92)
5000	3558.85 (22.41)	3483.60 (21.84)	3576.65 (19.58)	3570.50 (19.92)	3546.60 (20.53)	3379.30 (19.59)	3445.15 (21.97)	3558.85 (22.41)	3489.15 (23.95)	3433.05 (23.38)	2016.30 (21.73)	1044.50 (51.96)
6000	4274.80 (17.45)	4180.15 (17.27)	4291.60 (18.26)	4285.75 (18.49)	4259.75 (17.77)	4056.45 (22.34)	4136.15 (17.77)	4274.70 (17.48)	4187.45 (20.06)	4122.25 (17.16)	2417.15 (15.54)	1261.00 (79.32)
7000	4987.50 (19.12)	4874.50 (19.32)	5006.55 (16.98)	4998.90 (17.40)	4970.20 (19.82)	4736.00 (16.59)	4826.55 (18.75)	4987.35 (19.27)	4883.45 (19.68)	4808.35 (20.04)	2814.15 (17.08)	1449.50 (68.01)
8000	5700.30 (18.33)	5574.20 (20.32)	5724.10 (17.48)	5716.50 (17.51)	5682.50 (18.33)	5416.65 (25.31)	5519.65 (20.15)	5700.20 (18.29)	5589.70 (24.09)	5498.85 (20.61)	3227.50 (20.97)	1650.30 (73.44)
9000	6414.75 (20.94)	6268.10 (19.95)	6434.10 (21.39)	6427.05 (21.82)	6388.70 (23.75)	6089.55 (28.56)	6209.50 (20.66)	6414.70 (20.89)	6293.00 (23.44)	6187.90 (21.72)	3630.60 (21.92)	1850.45 (88.32)
10000	7120.15 (24.40)	6952.95 (28.21)	7145.70 (24.23)	7138.30 (24.69)	7094.00 (28.30)	6759.30 (25.66)	6889.55 (31.12)	7120.15 (24.40)	6979.30 (29.04)	6864.00 (31.73)	4029.90 (22.48)	2039.20 (98.10)

Table 44: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 6 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	14.32 (1.11)	14.34 (1.12)	14.38 (0.95)	13.44 (1.07)	13.42 (1.09)	11.98 (1.29)	11.72 (1.07)	12.54 (1.20)	12.68 (1.13)	11.56 (1.18)	6.66 (0.85)	6.36 (0.88)
40	27.56 (1.54)	27.60 (1.53)	27.84 (1.58)	26.68 (1.58)	26.46 (1.76)	23.96 (1.56)	24.14 (1.77)	25.34 (1.67)	25.36 (1.69)	24.00 (1.88)	14.44 (1.61)	11.04 (1.26)
60	41.12 (2.09)	40.82 (1.93)	41.52 (1.89)	40.20 (1.85)	40.04 (1.91)	36.32 (1.94)	37.10 (1.93)	38.84 (2.11)	38.50 (2.01)	36.86 (1.85)	21.26 (1.65)	15.40 (1.73)
80	54.16 (2.20)	54.06 (2.32)	54.72 (2.18)	53.32 (2.33)	53.08 (2.52)	48.78 (2.42)	49.52 (2.38)	51.84 (2.23)	51.02 (2.40)	49.26 (2.47)	28.78 (2.11)	19.68 (2.44)
100	66.82 (2.42)	66.60 (2.55)	67.80 (2.39)	66.56 (2.50)	66.12 (2.52)	60.90 (3.30)	61.88 (2.75)	64.62 (2.40)	63.70 (2.50)	61.50 (2.70)	36.24 (2.10)	24.18 (2.69)
200	132.06 (3.60)	131.42 (3.54)	134.06 (3.39)	132.46 (3.61)	131.60 (3.53)	122.50 (3.96)	125.12 (3.91)	130.12 (3.92)	127.64 (3.81)	124.40 (4.02)	73.06 (3.34)	45.42 (3.80)
300	196.54 (4.92)	195.58 (4.63)	200.04 (4.16)	198.04 (4.32)	196.86 (4.33)	183.62 (4.69)	187.70 (4.43)	194.98 (4.94)	191.24 (4.79)	186.64 (4.69)	109.24 (4.51)	64.70 (4.98)
400	262.16 (4.72)	260.64 (4.24)	267.20 (4.23)	265.08 (4.31)	263.22 (4.46)	246.28 (5.06)	251.70 (4.24)	260.72 (4.94)	256.08 (4.35)	250.38 (4.37)	146.32 (4.19)	86.16 (6.77)
500	327.78 (5.12)	325.32 (4.95)	332.90 (4.87)	330.50 (5.06)	328.26 (5.08)	307.70 (6.71)	315.06 (5.78)	326.54 (5.17)	320.34 (5.11)	313.48 (5.93)	183.90 (4.63)	104.52 (7.18)
600	393.94 (6.41)	390.10 (6.68)	399.72 (6.14)	396.88 (5.82)	394.30 (5.89)	370.04 (6.35)	378.76 (6.39)	393.24 (6.38)	384.96 (6.48)	376.82 (6.98)	219.32 (5.09)	124.18 (9.23)
700	458.08 (5.95)	453.56 (5.96)	464.90 (5.79)	462.22 (5.93)	458.46 (5.87)	430.82 (7.06)	441.16 (5.63)	457.26 (6.00)	448.00 (5.85)	438.48 (6.03)	257.32 (6.58)	144.50 (10.86)
800	524.00 (5.22)	517.76 (5.74)	531.04 (5.09)	528.18 (5.08)	525.30 (5.44)	491.72 (7.43)	504.48 (5.92)	523.36 (5.55)	512.46 (6.38)	501.18 (6.33)	292.50 (6.84)	167.16 (11.61)
900	587.56 (7.13)	579.82 (6.93)	595.42 (6.79)	592.10 (6.70)	588.40 (7.05)	552.28 (7.26)	565.82 (6.93)	587.06 (7.08)	574.78 (7.00)	562.38 (7.10)	328.60 (7.22)	185.26 (13.09)

Table 45: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 6 produced by the classical method (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	653.00 (6.91)	644.64 (6.63)	662.08 (6.23)	659.20 (6.57)	654.80 (6.71)	615.26 (8.13)	629.66 (7.09)	652.28 (6.98)	639.86 (6.68)	625.86 (7.72)	366.00 (6.50)	203.94 (12.61)
2000	1306.85 (11.99)	1283.40 (11.53)	1321.25 (11.35)	1317.35 (11.66)	1307.05 (11.83)	1231.45 (12.47)	1260.65 (11.36)	1306.50 (12.06)	1280.25 (11.04)	1253.75 (11.31)	733.35 (13.30)	397.30 (16.31)
3000	1958.45 (13.73)	1918.50 (14.67)	1974.65 (11.06)	1969.70 (11.66)	1955.70 (13.04)	1844.15 (13.07)	1889.60 (14.60)	1958.25 (13.72)	1916.80 (14.99)	1877.25 (14.63)	1102.50 (12.95)	592.25 (20.73)
4000	2613.95 (18.13)	2557.00 (16.29)	2635.35 (12.68)	2629.20 (13.32)	2610.70 (14.91)	2459.65 (12.26)	2521.40 (15.61)	2613.95 (18.13)	2557.45 (17.33)	2506.80 (15.29)	1462.15 (12.81)	771.65 (36.30)
5000	3271.90 (17.45)	3194.15 (16.77)	3299.10 (15.74)	3292.50 (15.37)	3268.60 (16.87)	3082.75 (17.76)	3153.65 (16.20)	3271.90 (17.45)	3201.75 (16.49)	3135.10 (19.10)	1837.80 (10.81)	960.15 (33.76)
6000	3922.70 (13.12)	3831.00 (14.96)	3951.50 (13.27)	3945.15 (13.07)	3917.65 (14.67)	3689.90 (15.23)	3783.10 (14.43)	3922.70 (13.12)	3838.65 (15.97)	3760.90 (15.67)	2200.50 (15.41)	1172.95 (38.27)
7000	4575.90 (25.18)	4468.55 (25.42)	4611.45 (21.09)	4604.05 (21.62)	4572.10 (20.93)	4313.70 (26.28)	4414.40 (25.96)	4575.80 (25.28)	4477.00 (27.81)	4389.50 (26.48)	2570.55 (18.13)	1364.70 (47.09)
8000	5232.50 (16.86)	5105.60 (19.17)	5267.70 (17.12)	5260.20 (16.99)	5222.35 (18.39)	4925.15 (17.02)	5047.20 (20.67)	5232.45 (16.88)	5118.85 (21.46)	5017.15 (21.60)	2940.05 (14.15)	1530.25 (62.96)
9000	5884.75 (21.34)	5737.90 (21.93)	5919.90 (19.18)	5911.75 (19.39)	5869.90 (19.95)	5542.25 (24.25)	5671.35 (20.88)	5884.65 (21.30)	5758.05 (22.91)	5636.10 (22.87)	3295.60 (16.72)	1729.05 (62.11)
10000	6547.25 (23.74)	6382.15 (22.82)	6586.55 (20.10)	6578.75 (19.62)	6532.45 (20.18)	6163.65 (19.94)	6311.30 (22.57)	6547.25 (23.74)	6404.75 (21.43)	6272.20 (22.27)	3671.35 (21.33)	1933.40 (74.31)

Table 46: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 7 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VR	VA	PT	OP1	OP2	T	IS	HL
20	13.28 (0.97)	13.24 (0.98)	13.26 (0.90)	12.10 (1.05)	10.64 (1.05)	10.68 (0.87)	11.26 (0.94)	11.66 (0.92)	10.46 (0.91)	6.02 (0.82)	5.78 (0.65)
40	25.72 (1.40)	25.60 (1.41)	26.06 (1.06)	24.74 (1.43)	21.86 (1.46)	22.28 (1.23)	23.48 (1.49)	23.52 (1.37)	21.98 (1.32)	13.20 (1.18)	10.28 (1.13)
60	37.52 (1.88)	37.56 (1.92)	38.36 (1.60)	37.00 (1.96)	33.54 (2.19)	33.76 (2.02)	35.32 (2.09)	35.20 (1.97)	33.44 (2.09)	19.84 (1.75)	14.18 (1.86)
80	49.78 (2.01)	49.60 (2.03)	50.26 (1.86)	48.72 (1.93)	44.16 (2.11)	45.40 (2.05)	47.12 (1.86)	46.88 (2.04)	45.00 (2.11)	26.12 (1.73)	18.32 (1.50)
100	61.66 (2.09)	61.34 (2.15)	62.88 (2.00)	60.72 (1.93)	55.42 (2.45)	56.72 (1.91)	59.02 (2.19)	58.32 (1.97)	56.26 (2.18)	33.08 (2.03)	21.90 (2.21)
200	121.54 (3.27)	120.82 (3.13)	124.34 (2.53)	121.80 (2.48)	112.12 (3.27)	114.64 (3.29)	119.24 (3.15)	117.34 (3.27)	113.76 (3.46)	66.96 (2.38)	41.74 (3.77)
300	182.04 (3.97)	181.48 (4.04)	186.20 (3.18)	183.02 (3.74)	168.86 (4.31)	173.28 (4.00)	180.20 (3.98)	176.38 (4.02)	171.72 (4.43)	100.08 (3.10)	61.56 (5.32)
400	242.38 (4.13)	240.18 (4.38)	247.12 (4.31)	243.34 (4.13)	225.10 (4.26)	230.86 (4.62)	240.98 (4.24)	235.74 (4.22)	228.14 (5.07)	134.24 (3.83)	78.64 (5.08)
500	302.64 (4.61)	299.82 (4.63)	308.50 (4.24)	304.24 (5.07)	282.00 (4.99)	289.62 (5.17)	301.44 (4.63)	295.04 (4.71)	287.04 (5.28)	167.62 (3.97)	96.12 (6.60)
600	363.48 (5.90)	359.64 (4.95)	370.64 (4.91)	364.98 (4.99)	339.56 (6.78)	348.44 (5.16)	362.68 (5.95)	354.90 (5.37)	345.22 (5.23)	202.14 (4.68)	115.10 (5.53)
700	422.96 (5.35)	417.60 (5.81)	430.92 (4.45)	424.36 (4.90)	394.94 (5.35)	405.32 (5.94)	421.98 (5.42)	412.70 (5.64)	401.68 (5.99)	234.72 (4.80)	134.86 (7.17)
800	482.56 (5.96)	476.54 (6.11)	491.26 (5.32)	484.98 (5.11)	451.26 (7.09)	462.90 (6.38)	481.58 (6.10)	471.52 (6.10)	459.12 (6.43)	268.80 (5.77)	152.06 (8.42)
900	542.84 (5.93)	534.92 (5.91)	552.72 (5.39)	545.90 (5.68)	507.58 (8.20)	520.52 (6.37)	542.24 (6.17)	529.96 (6.48)	516.26 (6.46)	303.94 (5.80)	171.42 (9.52)

Table 47: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 7 produced by the classical method (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	603.88 (5.68)	594.90 (5.82)	613.94 (5.27)	610.84 (5.27)	606.08 (5.52)	565.26 (8.06)	579.52 (6.01)	603.48 (5.82)	590.50 (5.66)	573.68 (5.99)	338.04 (6.79)	189.16 (10.23)
2000	1207.90 (7.91)	1182.65 (7.67)	1224.15 (7.72)	1220.05 (7.38)	1210.95 (7.03)	1131.65 (10.16)	1160.30 (7.58)	1207.75 (7.86)	1179.55 (8.53)	1148.05 (8.70)	672.40 (8.89)	371.45 (16.19)
3000	1812.45 (12.07)	1769.95 (11.06)	1835.10 (8.12)	1829.10 (8.71)	1815.50 (9.17)	1697.15 (13.20)	1739.50 (11.51)	1812.30 (12.17)	1768.25 (9.92)	1721.55 (11.60)	1010.75 (7.36)	557.80 (24.24)
4000	2420.00 (16.78)	2361.80 (14.29)	2446.95 (15.56)	2440.70 (15.68)	2421.35 (15.14)	2264.35 (18.16)	2322.85 (15.27)	2419.90 (16.70)	2362.80 (17.86)	2300.85 (17.16)	1352.55 (16.08)	731.30 (20.83)
5000	3019.85 (18.10)	2945.95 (19.25)	3052.90 (15.14)	3046.60 (15.83)	3023.15 (16.31)	2825.20 (17.36)	2903.15 (19.95)	3019.80 (18.11)	2950.90 (17.32)	2875.20 (20.43)	1686.90 (10.68)	900.75 (28.45)
6000	3630.40 (17.36)	3538.75 (16.60)	3670.75 (16.02)	3664.10 (16.29)	3634.85 (15.88)	3400.25 (18.37)	3489.00 (19.91)	3630.40 (17.36)	3546.90 (19.34)	3455.25 (20.02)	2024.80 (15.94)	1069.60 (31.21)
7000	4227.55 (16.75)	4123.10 (16.37)	4276.85 (16.41)	4269.95 (16.24)	4235.80 (17.10)	3960.05 (17.94)	4067.35 (18.60)	4227.40 (16.60)	4135.75 (18.56)	4028.75 (20.50)	2365.00 (12.95)	1256.50 (37.72)
8000	4835.00 (18.49)	4708.20 (22.59)	4887.75 (15.82)	4879.65 (16.38)	4840.55 (16.42)	4535.65 (23.03)	4647.90 (19.81)	4834.95 (18.47)	4724.80 (18.08)	4603.90 (21.93)	2698.25 (20.29)	1429.30 (32.56)
9000	5443.70 (18.79)	5299.40 (18.11)	5498.60 (15.55)	5489.55 (14.65)	5448.25 (16.08)	5095.20 (19.78)	5233.25 (18.67)	5443.60 (18.81)	5322.00 (16.33)	5182.80 (20.54)	3043.05 (20.07)	1629.70 (57.56)
	(23.46)	(19.02)	(18.22)	(18.29)	(16.86)	(21.67)	(21.48)	(23.46)	(26.83)	(25.84)	(27.04)	(48.60)

Table 48: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 8 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VR	VA	PT	OP1	OP2	T	IS	HL
20	11.98 (0.87)	11.94 (0.89)	12.18 (0.87)	10.98 (0.94)	9.68 (0.91)	9.52 (0.95)	10.08 (0.92)	10.48 (0.89)	9.36 (0.90)	5.40 (0.76)	5.46 (0.68)
40	23.98 (1.38)	23.82 (1.32)	24.18 (1.27)	22.84 (1.33)	20.10 (1.57)	20.56 (1.25)	21.66 (1.33)	21.80 (1.37)	20.26 (1.38)	11.78 (1.13)	9.64 (1.08)
60	35.22 (1.63)	35.18 (1.77)	36.04 (1.59)	34.32 (1.77)	30.56 (1.82)	31.36 (1.47)	32.86 (1.73)	32.62 (1.71)	31.02 (1.65)	18.30 (1.31)	13.60 (1.14)
80	46.56 (1.92)	46.30 (2.02)	47.30 (1.88)	45.66 (1.86)	41.10 (2.22)	42.18 (2.07)	44.00 (2.15)	43.80 (2.18)	41.80 (2.16)	24.02 (1.92)	17.14 (1.84)
100	57.72 (1.90)	57.54 (1.96)	59.16 (1.75)	57.12 (1.70)	51.12 (2.26)	53.04 (2.21)	55.48 (1.76)	54.80 (2.02)	52.36 (2.41)	30.46 (1.69)	20.74 (2.35)
200	113.42 (2.98)	113.16 (3.01)	116.44 (2.73)	113.64 (2.80)	103.44 (3.14)	106.48 (2.71)	111.36 (3.07)	108.94 (2.97)	105.38 (2.88)	62.18 (2.74)	38.98 (3.08)
300	169.66 (4.26)	168.94 (3.89)	174.18 (3.79)	171.06 (3.82)	156.66 (4.44)	161.36 (4.15)	168.22 (4.20)	164.08 (4.12)	158.84 (4.03)	93.48 (3.50)	56.30 (3.12)
400	225.82 (3.94)	223.70 (4.28)	231.10 (4.29)	226.90 (4.15)	209.08 (5.18)	215.00 (3.98)	224.42 (3.89)	219.48 (3.93)	212.40 (3.97)	124.96 (4.49)	73.62 (4.80)
500	282.12 (5.43)	278.90 (5.25)	288.36 (4.39)	283.42 (4.54)	262.02 (5.60)	268.62 (5.21)	280.98 (5.71)	273.80 (4.82)	265.26 (5.15)	156.32 (3.84)	91.32 (5.34)
600	336.36 (5.82)	332.60 (5.66)	344.30 (5.20)	339.24 (4.85)	312.24 (6.74)	321.62 (5.72)	335.50 (5.78)	327.76 (5.52)	317.16 (6.17)	186.92 (4.44)	109.12 (7.02)
700	393.90 (4.95)	389.34 (5.36)	402.86 (4.81)	397.20 (4.86)	366.14 (6.38)	377.10 (5.46)	393.26 (4.84)	384.12 (5.06)	372.26 (5.89)	218.58 (5.41)	125.90 (6.79)
800	451.78 (6.10)	445.62 (5.56)	461.16 (5.72)	454.86 (5.98)	419.74 (7.17)	432.62 (5.58)	450.90 (6.07)	439.90 (6.44)	427.30 (6.64)	252.04 (5.45)	142.92 (7.02)
900	506.46 (6.42)	499.54 (6.30)	517.20 (6.21)	510.04 (6.58)	472.60 (7.02)	485.18 (6.00)	506.02 (6.35)	494.16 (6.32)	478.44 (6.25)	281.28 (6.28)	161.20 (8.62)

Table 49: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 8 produced by the classical method (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	563.78 (7.05)	554.94 (6.71)	575.20 (5.92)	571.84 (6.07)	567.30 (6.71)	524.14 (8.53)	539.58 (7.32)	563.24 (7.09)	550.12 (6.87)	532.90 (7.63)	313.82 (5.48)	178.04 (10.35)
2000	1124.85 (9.84)	1101.25 (10.30)	1144.85 (9.93)	1140.55 (9.90)	1130.05 (10.46)	1046.80 (12.66)	1077.90 (9.91)	1124.50 (9.83)	1096.80 (10.97)	1062.95 (10.35)	625.40 (7.26)	348.70 (16.08)
3000	1681.30 (12.64)	1643.80 (13.07)	1711.45 (10.49)	1706.10 (11.23)	1690.00 (11.30)	1567.15 (15.43)	1612.75 (12.85)	1681.00 (12.53)	1640.35 (14.82)	1590.55 (13.38)	936.60 (11.28)	516.10 (12.72)
4000	2248.05 (17.08)	2193.60 (15.01)	2282.10 (13.97)	2276.65 (14.05)	2258.45 (16.51)	2092.45 (15.34)	2156.15 (15.09)	2248.00 (17.08)	2194.60 (17.26)	2126.85 (15.05)	1250.45 (12.92)	686.60 (17.03)
5000	2817.20 (15.41)	2746.95 (16.16)	2857.45 (13.70)	2851.30 (13.60)	2828.40 (15.69)	2621.50 (17.98)	2702.80 (16.34)	2817.10 (15.43)	2749.65 (14.42)	2666.60 (18.60)	1568.50 (12.62)	866.75 (16.18)
6000	3374.70 (23.61)	3289.70 (23.64)	3423.70 (19.69)	3416.50 (19.79)	3389.40 (22.10)	3149.95 (25.68)	3239.90 (24.30)	3374.65 (23.57)	3294.90 (24.40)	3196.90 (25.58)	1883.75 (16.04)	1020.45 (30.40)
7000	3937.50 (20.93)	3832.30 (18.75)	3990.90 (16.30)	3982.60 (16.36)	3948.45 (14.94)	3667.15 (20.94)	3776.80 (16.24)	3937.50 (20.93)	3837.60 (18.64)	3726.70 (17.09)	2190.15 (14.12)	1191.55 (40.47)
8000	4506.95 (23.77)	4389.45 (21.96)	4570.50 (21.98)	4563.10 (22.42)	4525.40 (23.86)	4202.70 (24.67)	4325.35 (22.28)	4506.95 (23.77)	4398.45 (26.78)	4268.75 (25.54)	2510.50 (20.42)	1370.35 (40.96)
9000	5053.60 (22.75)	4917.60 (20.07)	5124.85 (18.34)	5116.35 (18.10)	5071.35 (16.81)	4709.40 (23.21)	4848.20 (20.03)	5053.50 (22.73)	4938.20 (22.68)	4784.55 (21.80)	2816.45 (20.57)	1517.90 (38.23)
10000	5629.30 (20.45)	5470.85 (22.48)	5704.00 (22.61)	5695.10 (22.16)	5646.25 (24.59)	5246.50 (26.28)	5396.05 (24.37)	5629.20 (20.54)	5492.25 (22.84)	5323.30 (22.19)	3130.55 (23.32)	1680.25 (47.65)

Table 50: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 9 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	11.40 (0.83)	11.38 (0.75)	11.58 (0.70)	10.30 (0.97)	10.24 (0.94)	8.90 (0.99)	8.92 (0.80)	9.48 (0.79)	9.86 (0.95)	8.72 (0.90)	5.08 (0.78)	5.02 (0.59)
40	22.30 (1.31)	22.28 (1.26)	22.72 (1.26)	21.40 (1.34)	21.38 (1.29)	18.74 (1.44)	19.16 (1.22)	20.20 (1.40)	20.12 (1.27)	18.72 (1.25)	11.10 (1.25)	9.04 (1.11)
60	32.78 (1.57)	32.56 (1.61)	33.52 (1.23)	32.04 (1.32)	31.92 (1.45)	28.18 (1.69)	29.06 (1.58)	30.58 (1.40)	30.38 (1.51)	28.56 (1.53)	16.94 (1.45)	12.04 (1.19)
80	43.54 (1.90)	43.40 (1.99)	44.74 (1.70)	43.48 (1.73)	43.02 (1.90)	38.30 (1.73)	39.20 (1.84)	41.30 (1.92)	40.90 (1.68)	38.62 (1.75)	23.02 (1.81)	16.12 (1.52)
100	54.08 (2.19)	54.08 (2.00)	55.68 (1.88)	54.34 (2.18)	53.72 (2.19)	48.40 (2.40)	49.54 (1.98)	51.66 (2.23)	51.06 (2.09)	48.84 (2.23)	28.84 (2.06)	19.16 (1.95)
200	106.34 (3.14)	106.04 (3.07)	109.62 (2.50)	107.76 (2.63)	106.86 (3.16)	96.68 (3.61)	99.78 (3.08)	104.56 (3.25)	102.32 (3.34)	98.22 (3.61)	57.90 (2.14)	36.42 (2.71)
300	157.90 (3.38)	157.06 (3.51)	162.80 (3.31)	160.94 (3.32)	159.70 (3.70)	145.56 (4.45)	149.54 (3.14)	156.40 (3.55)	152.82 (3.52)	147.12 (3.60)	87.30 (3.31)	52.72 (2.98)
400	210.48 (3.67)	208.68 (3.85)	216.70 (3.30)	214.54 (3.51)	212.66 (3.41)	194.70 (5.07)	199.98 (3.58)	209.16 (3.91)	204.26 (3.52)	196.84 (3.80)	116.34 (3.65)	69.06 (4.02)
500	262.96 (3.72)	260.70 (3.84)	270.24 (3.73)	267.82 (3.88)	265.26 (4.11)	242.02 (4.91)	250.28 (3.68)	261.84 (4.04)	255.92 (3.47)	246.22 (3.94)	145.54 (3.75)	86.50 (4.22)
600	314.42 (6.01)	310.92 (5.38)	323.44 (5.41)	320.74 (5.34)	317.86 (5.61)	290.96 (5.98)	300.04 (5.90)	313.54 (6.08)	305.92 (5.94)	295.24 (6.25)	173.40 (5.53)	101.02 (5.13)
700	366.80 (6.01)	363.12 (5.72)	376.90 (6.01)	374.28 (5.76)	370.82 (5.94)	340.00 (6.94)	350.74 (6.03)	366.16 (6.14)	357.32 (5.98)	344.86 (6.59)	202.02 (5.22)	118.80 (5.75)
800	420.90 (6.54)	415.42 (5.85)	432.16 (5.61)	429.08 (5.76)	425.34 (5.55)	390.66 (6.11)	402.12 (6.37)	419.96 (6.69)	410.20 (6.33)	395.44 (6.66)	234.18 (4.81)	135.16 (6.73)
900	473.40 (6.15)	467.08 (5.65)	485.84 (5.28)	482.74 (5.47)	478.62 (5.66)	439.20 (7.77)	452.92 (5.51)	472.96 (6.19)	461.24 (5.76)	445.02 (6.39)	262.12 (5.98)	153.12 (7.39)

Table 51: Average Size of Maximum Induced Planar Subgraph on graphs of size n and expected average degree 9 produced by the classical method (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	524.50 (6.33)	516.78 (6.68)	537.24 (5.32)	534.28 (5.18)	529.94 (5.72)	485.50 (7.01)	501.40 (6.46)	524.06 (6.50)	511.44 (6.70)	493.58 (6.88)	289.98 (5.58)	166.94 (7.95)
2000	1049.60 (8.84)	1027.40 (7.46)	1071.35 (7.15)	1066.95 (6.88)	1057.80 (7.79)	974.50 (9.56)	1003.70 (8.07)	1049.50 (8.86)	1022.30 (7.45)	987.35 (9.16)	582.40 (8.48)	330.20 (10.78)
3000	1577.65 (16.74)	1541.70 (13.54)	1608.70 (12.96)	1603.30 (13.09)	1589.45 (13.48)	1467.05 (14.40)	1511.00 (12.74)	1577.55 (16.92)	1539.10 (14.12)	1487.45 (15.67)	875.25 (10.47)	492.55 (16.40)
4000	2104.50 (14.09)	2052.50 (13.54)	2145.10 (12.55)	2139.30 (12.99)	2120.30 (14.25)	1952.85 (18.52)	2016.40 (15.05)	2104.50 (14.09)	2052.85 (15.77)	1983.55 (15.36)	1168.85 (10.84)	653.70 (24.00)
5000	2623.40 (12.12)	2561.90 (9.94)	2676.95 (11.05)	2670.35 (10.69)	2645.15 (11.45)	2441.00 (20.82)	2515.40 (11.27)	2623.25 (12.06)	2560.55 (9.60)	2473.25 (13.79)	1461.10 (12.60)	806.75 (22.81)
6000	3159.30 (16.18)	3079.50 (13.52)	3213.20 (12.76)	3206.85 (12.70)	3177.40 (12.37)	2931.70 (14.05)	3026.80 (13.55)	3159.30 (16.18)	3082.70 (15.41)	2979.40 (16.19)	1757.95 (10.71)	964.05 (38.13)
7000	3678.95 (13.82)	3581.55 (13.02)	3747.50 (11.61)	3739.50 (11.09)	3704.20 (10.73)	3418.25 (13.82)	3523.05 (13.10)	3678.90 (13.83)	3587.55 (11.26)	3464.35 (13.17)	2044.70 (15.69)	1112.90 (23.48)
8000	4204.45 (21.69)	4090.45 (18.64)	4277.35 (15.38)	4268.40 (15.63)	4231.35 (16.97)	3899.55 (20.20)	4022.90 (18.73)	4204.35 (21.65)	4098.85 (19.90)	3957.55 (17.86)	2335.55 (16.25)	1277.15 (35.40)
9000	4731.65 (18.99)	4599.50 (16.49)	4813.50 (18.23)	4805.80 (18.09)	4762.55 (18.14)	4394.90 (17.93)	4530.05 (18.09)	4731.65 (18.99)	4609.80 (22.06)	4454.10 (18.56)	2629.95 (13.69)	1444.50 (47.23)
10000	5264.20 (23.38)	5123.85 (23.54)	5353.95 (20.60)	5344.65 (20.63)	5301.45 (21.64)	4895.70 (21.81)	5045.00 (21.70)	5264.20 (23.38)	5133.85 (25.65)	4963.05 (23.86)	2924.65 (18.18)	1594.85 (25.01)

4 Results - Time Taken to Produce Induced Planar Subgraph

4.1 Tests on Graphs Generated By Bollobás Method

Table 52: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 3-regular graphs of size n produced by Bollobás algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	152.92 (16.94)	1356.54 (8332.98)	372.04 (1858.09)	16.68 (1.65)	17.16 (1.71)	30.76 (9.52)	23.88 (2.68)	963.50 (6580.21)	59.66 (10.25)	22.22 (2.43)	8.88 (0.80)	7.44 (1.36)
40	668.90 (1495.25)	569.08 (76.27)	279.68 (73.19)	35.36 (0.66)	36.66 (4.00)	120.84 (41.03)	56.16 (6.15)	82.34 (15.69)	382.84 (1274.79)	52.74 (5.42)	16.92 (1.14)	13.80 (0.78)
60	1069.22 (1294.07)	1147.18 (169.52)	527.52 (149.41)	53.62 (0.60)	55.68 (0.59)	310.04 (103.36)	97.64 (11.64)	142.82 (32.18)	581.10 (771.22)	94.44 (11.71)	25.62 (1.31)	19.88 (1.14)
80	1481.58 (1183.75)	1885.66 (251.38)	798.84 (240.80)	71.82 (0.63)	75.80 (0.73)	571.64 (277.53)	143.84 (22.97)	248.36 (75.29)	806.28 (170.88)	138.70 (22.68)	33.88 (1.24)	26.12 (1.19)
100	1958.42 (1212.48)	2649.20 (322.24)	1136.08 (260.69)	90.44 (0.76)	97.16 (2.27)	943.40 (265.68)	349.38 (1044.02)	350.56 (107.17)	1296.02 (273.52)	1172.16 (6910.23)	44.62 (1.96)	32.78 (1.34)
200	4954.54 (857.08)	9077.74 (1611.26)	3130.24 (1033.59)	187.18 (7.48)	215.94 (6.49)	4677.12 (1107.84)	594.20 (88.41)	1364.52 (410.09)	6728.46 (2842.97)	577.58 (89.40)	91.92 (1.76)	64.92 (6.05)
300	9501.68 (1624.61)	19954.74 (10913.17)	6350.16 (1861.34)	299.62 (93.44)	357.26 (7.07)	12105.70 (2173.46)	1135.22 (174.00)	3432.44 (1212.15)	19303.24 (21798.05)	1110.44 (176.66)	141.72 (9.45)	95.18 (2.21)
400	14124.72 (2550.15)	32096.68 (5275.74)	10076.30 (3322.07)	482.64 (597.27)	518.74 (3.16)	25567.70 (6348.98)	1891.76 (272.52)	7007.22 (1928.91)	32816.34 (9229.22)	1874.70 (297.86)	189.52 (4.14)	129.78 (16.42)
500	22025.28 (10573.97)	48745.80 (6607.04)	14676.22 (4322.74)	711.94 (1371.75)	705.30 (5.76)	41772.42 (6562.54)	2865.42 (385.25)	10998.52 (2981.82)	56529.22 (18193.00)	2844.56 (371.99)	237.14 (4.51)	158.74 (5.16)
600	27984.62 (7642.27)	71495.74 (9810.79)	20238.84 (5477.61)	620.66 (34.11)	916.16 (8.73)	64517.94 (9304.19)	3885.50 (512.99)	16227.54 (4335.67)	83012.80 (21181.03)	3829.20 (515.22)	288.82 (12.31)	193.08 (3.04)
700	36632.34 (8730.67)	105830.90 (13148.97)	28423.08 (9091.93)	737.28 (7.66)	1149.60 (9.08)	91495.90 (14431.03)	5347.30 (1324.17)	24645.66 (13543.39)	127092.10 (43331.04)	5141.14 (690.42)	340.74 (4.59)	227.82 (8.63)
800	50102.68 (1663.21)	139566.78 (18446.10)	34349.18 (8769.63)	861.08 (8.72)	1403.28 (13.23)	123449.80 (14102.79)	6767.18 (1244.28)	32983.98 (9900.32)	166470.06 (41029.69)	6528.72 (724.31)	393.80 (4.21)	260.26 (4.03)
900	58555.76 (12922.93)	188520.20 (31857.51)	44469.34 (13936.63)	991.88 (16.73)	1630.54 (12.00)	169275.52 (18040.51)	10379.86 (14155.71)	43104.12 (12757.34)	222777.48 (66048.65)	8283.86 (1071.38)	445.26 (8.87)	293.10 (4.53)
1000	76907.28 (22011.36)	230978.74 (34955.79)	62302.80 (21225.13)	1130.80 (27.56)	1987.12 (59.96)	220765.94 (26002.51)	10351.88 (1513.34)	57698.54 (16972.06)	312032.72 (170195.99)	10089.92 (1286.20)	493.18 (7.29)	322.62 (4.75)

Table 53: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 4-regular graphs of size n produced by Bollobás algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	229.96 (537.20)	428.78 (1826.63)	297.08 (1272.61)	25.70 (7.70)	21.36 (1.38)	33.18 (13.89)	25.22 (3.07)	31.42 (5.90)	66.64 (12.82)	22.82 (47.37)	17.02 (47.37)	6.76 (0.66)
40	422.48 (72.69)	511.98 (55.93)	322.46 (74.27)	58.90 (0.99)	113.50 (478.45)	133.60 (53.96)	60.14 (5.06)	76.60 (12.36)	237.26 (52.91)	56.48 (5.15)	17.60 (0.76)	13.06 (0.74)
60	779.28 (137.22)	1021.84 (129.97)	510.08 (152.17)	98.50 (1.42)	70.94 (0.93)	301.12 (112.01)	274.48 (1218.81)	138.12 (35.10)	691.98 (1307.28)	96.78 (10.87)	27.52 (1.49)	19.28 (0.88)
80	1103.48 (241.61)	1571.00 (202.60)	771.06 (180.33)	146.72 (6.23)	96.98 (0.89)	611.14 (181.97)	151.14 (21.21)	220.92 (56.01)	856.20 (200.89)	141.98 (18.55)	36.40 (1.39)	25.00 (1.07)
100	1424.38 (215.23)	2292.04 (291.05)	1052.66 (243.78)	198.84 (5.97)	124.52 (3.56)	992.98 (242.21)	337.38 (1007.13)	334.98 (79.00)	1563.86 (467.35)	185.56 (25.82)	47.02 (1.55)	31.44 (1.23)
200	4095.84 (833.81)	10761.38 (23053.16)	2911.96 (691.36)	568.50 (10.37)	279.24 (4.16)	4681.28 (852.96)	522.20 (67.42)	1070.88 (292.90)	6125.28 (1791.04)	499.36 (68.05)	96.88 (3.68)	60.38 (1.47)
300	6764.82 (1159.56)	15522.12 (2120.79)	4966.56 (1140.18)	1102.18 (12.56)	465.20 (6.53)	11884.94 (1933.56)	1034.04 (173.83)	2635.72 (657.28)	15891.40 (5176.00)	985.96 (154.93)	148.14 (2.19)	91.70 (3.45)
400	10739.30 (1843.49)	27680.32 (3036.92)	8872.74 (1806.84)	1826.62 (18.92)	690.38 (70.18)	23012.74 (3816.08)	1805.98 (1140.23)	4502.60 (1339.49)	29461.20 (10670.74)	1626.80 (277.18)	200.34 (2.50)	123.40 (8.48)
500	14641.76 (2774.21)	45609.90 (7489.66)	12175.98 (3602.66)	2751.86 (24.13)	932.28 (10.33)	39979.10 (5569.61)	2488.84 (386.96)	7187.38 (2045.66)	47711.78 (15596.68)	2411.74 (391.79)	255.94 (6.95)	152.18 (4.91)
600	19883.18 (3031.52)	62415.82 (9835.24)	16867.08 (3887.47)	3879.98 (36.50)	1208.66 (7.90)	62605.76 (9864.33)	3407.62 (471.45)	10876.12 (2949.52)	73009.38 (17572.49)	3315.44 (474.64)	305.90 (4.13)	185.02 (3.35)
700	24614.98 (3781.02)	85616.28 (10404.13)	22285.58 (4287.31)	5211.54 (118.71)	1519.98 (8.81)	87653.24 (10295.20)	4627.34 (1090.95)	14483.76 (3653.91)	103637.86 (36535.26)	4388.96 (558.29)	361.30 (3.46)	216.32 (4.77)
800	30304.94 (6707.62)	111900.36 (14050.33)	27629.18 (5952.65)	6699.76 (59.72)	1898.20 (243.12)	118230.12 (11749.20)	5619.42 (817.62)	20578.78 (6673.57)	142855.98 (39853.44)	7974.94 (17881.82)	418.14 (8.17)	521.50 (1935.54)
900	40691.76 (9667.87)	140286.42 (17775.43)	37023.08 (9013.35)	8430.12 (97.01)	2238.40 (21.41)	163499.28 (16468.60)	6969.84 (1393.52)	26781.12 (8629.14)	185851.14 (56383.91)	6671.90 (1035.50)	468.48 (5.59)	277.58 (4.30)

Table 54: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 5-regular graphs of size n produced by Bollobás algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	238.00 (569.61)	499.76 (2301.93)	352.84 (1441.75)	30.22 (1.57)	25.24 (1.55)	33.50 (12.22)	26.26 (2.88)	30.80 (5.26)	75.42 (12.11)	23.78 (4.18)	19.62 (70.05)	9.22 (1.09)
40	389.96 (73.52)	475.70 (66.37)	372.10 (68.17)	73.60 (1.29)	55.50 (0.76)	135.62 (47.78)	61.66 (9.19)	78.96 (18.09)	244.40 (54.40)	55.70 (7.37)	19.14 (4.97)	17.64 (1.40)
60	704.48 (122.91)	938.80 (135.99)	564.88 (113.98)	124.74 (3.55)	85.34 (0.98)	334.66 (121.09)	104.32 (17.83)	462.40 (2291.25)	543.40 (136.63)	95.24 (12.33)	28.50 (1.43)	25.80 (1.95)
80	1091.28 (199.32)	1522.36 (176.85)	836.84 (177.76)	185.48 (2.18)	117.24 (2.86)	582.06 (156.85)	303.88 (1035.51)	213.48 (51.86)	939.00 (231.13)	148.38 (21.69)	38.16 (1.92)	33.58 (2.17)
100	1491.90 (275.61)	2144.50 (299.92)	1248.62 (265.53)	256.92 (13.57)	150.74 (7.89)	912.78 (274.63)	348.26 (998.80)	299.24 (74.15)	1552.34 (516.32)	195.18 (27.49)	49.48 (5.64)	42.72 (2.25)
200	3810.78 (671.24)	6966.80 (791.73)	3420.46 (599.71)	750.20 (13.36)	335.40 (2.60)	4323.92 (898.85)	562.48 (82.09)	1020.66 (265.06)	6106.82 (1395.72)	535.10 (77.53)	102.16 (3.81)	83.62 (3.53)

Table 55: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 6-regular graphs of size n produced by Bollobás algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
20	248.38 (600.19)	528.04 (2493.15)	386.20 (1586.06)	36.16 (4.95)	30.14 (1.84)	33.38 (13.30)	26.40 (4.38)	30.44 (5.93)	80.22 (14.78)	23.42 (2.67)	20.96 (79.09)	10.16 (1.22)
40	396.02 (75.14)	441.80 (70.94)	370.84 (59.61)	87.24 (2.13)	65.44 (0.81)	123.90 (40.81)	61.26 (6.59)	78.58 (18.81)	262.52 (68.20)	56.38 (7.03)	18.86 (0.81)	19.98 (1.27)
60	712.96 (154.85)	903.72 (142.28)	660.84 (148.93)	147.86 (3.45)	101.30 (2.98)	319.48 (111.65)	124.64 (133.22)	142.84 (26.22)	523.44 (106.21)	99.32 (14.37)	30.00 (1.31)	29.20 (1.81)
80	1317.72 (1904.04)	1405.26 (167.01)	966.20 (181.22)	219.80 (3.98)	137.96 (1.05)	570.22 (146.63)	158.70 (17.47)	213.78 (37.93)	966.24 (264.47)	148.32 (17.82)	39.72 (1.64)	39.88 (3.72)

4.2 Tests on Graphs Generated By Steger-Wormald Method

Table 56: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 3-regular graphs of size n produced by Steger-Wormald algorithm.

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
20	149.90 (19.64)	175.06 (18.09)	107.76 (23.18)	16.76 (1.06)	16.76 (1.10)	33.24 (16.43)	23.14 (2.02)	33.12 (3.68)	57.50 (11.70)	21.42 (1.90)	8.58 (0.64)	7.26 (0.88)
40	624.02 (1337.84)	567.50 (72.86)	286.22 (79.34)	35.66 (0.59)	36.64 (0.56)	129.12 (54.33)	56.42 (8.73)	82.66 (16.97)	267.36 (427.33)	52.82 (7.06)	16.88 (0.94)	13.84 (0.96)
60	1011.66 (1225.36)	1084.74 (144.84)	480.76 (133.48)	54.10 (0.84)	56.78 (4.69)	290.84 (90.38)	98.92 (11.92)	148.66 (32.02)	632.22 (1301.21)	94.60 (11.68)	25.32 (1.27)	20.24 (1.04)
80	1295.24 (220.82)	1839.40 (267.38)	709.84 (216.71)	72.42 (0.78)	76.46 (0.79)	543.24 (193.36)	148.46 (28.11)	226.96 (45.93)	855.42 (275.73)	141.98 (25.31)	34.04 (1.31)	26.44 (1.18)
100	1912.40 (1255.36)	2656.20 (369.00)	1027.70 (286.60)	91.44 (0.67)	98.52 (4.34)	2162.32 (9005.43)	193.50 (32.97)	365.44 (108.13)	1301.76 (422.00)	185.96 (32.50)	44.52 (1.53)	32.66 (1.35)
200	4856.16 (928.04)	9244.68 (1168.39)	3212.86 (944.78)	611.48 (2992.30)	217.10 (2.78)	4645.78 (1105.03)	572.34 (84.39)	1435.48 (346.53)	6418.84 (2187.56)	560.56 (84.91)	91.74 (1.76)	63.38 (2.10)
300	9218.54 (1730.48)	18947.82 (2231.72)	6404.42 (1913.46)	289.72 (5.21)	359.22 (6.69)	12087.62 (2170.48)	1297.78 (1032.80)	3166.66 (925.22)	15146.54 (2927.20)	1132.36 (179.53)	140.52 (7.12)	463.14 (1769.86)
400	13820.54 (2351.15)	33159.92 (5176.94)	10595.90 (3253.65)	395.44 (6.46)	523.62 (7.52)	24430.36 (3549.17)	1882.32 (292.00)	6434.70 (1745.13)	32581.66 (11174.18)	1841.80 (284.92)	189.46 (2.28)	126.48 (2.82)
500	21013.90 (3385.39)	52168.60 (9105.39)	15656.66 (8226.41)	506.34 (5.15)	711.30 (8.62)	40899.18 (6306.14)	2928.88 (1165.21)	11371.02 (3843.38)	52431.16 (17495.33)	2735.28 (433.74)	236.96 (2.73)	159.92 (3.56)
600	28803.48 (5306.43)	75334.48 (9639.67)	21742.06 (7200.80)	628.32 (28.29)	922.24 (8.00)	62389.18 (9047.33)	3943.04 (492.71)	16699.08 (5355.85)	83105.16 (23694.40)	3902.02 (509.10)	287.90 (2.57)	193.12 (3.67)
700	36479.04 (6720.50)	107904.72 (17214.40)	28631.68 (8356.49)	743.62 (7.77)	1155.98 (9.68)	94084.28 (12393.88)	5500.14 (1203.42)	22940.56 (6669.52)	119697.08 (32661.51)	5281.48 (626.91)	342.14 (7.93)	227.94 (7.71)
800	46606.18 (11979.42)	148851.84 (21395.35)	38931.02 (13928.50)	882.84 (92.75)	1413.10 (12.26)	122361.78 (16808.24)	7034.70 (1199.98)	32770.40 (13415.29)	171240.68 (79514.58)	6794.68 (751.66)	464.22 (489.06)	260.92 (4.98)
900	57175.80 (12048.97)	188416.64 (33626.35)	48448.46 (16425.38)	1001.16 (9.95)	1684.96 (4.79)	169948.90 (20999.39)	8415.20 (1538.57)	40746.66 (11925.45)	237987.88 (72450.67)	8195.42 (1245.53)	448.04 (12.29)	295.92 (10.98)

Table 57: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 3-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	75672.12 (20920.59)	228415.82 (31145.65)	53109.60 (21226.77)	1135.60 (14.66)	1988.10 (17.42)	221139.32 (28588.79)	10570.16 (1626.98)	55094.54 (18328.16)	268795.54 (67636.70)	10343.10 (1203.66)	493.54 (6.12)	322.48 (4.00)
2000	339835.10 (103937.15)	777395.95 (92722.93)	188002.35 (54016.65)	2783.85 (100.58)	6598.95 (104.27)	1209121.75 (114460.84)	37735.05 (4659.25)	308503.50 (110843.26)	1586814.35 (471997.18)	37163.60 (3745.60)	1035.10 (12.55)	661.60 (10.85)
3000	957533.60 (313087.34)	1858660.50 (225160.60)	426095.70 (113089.52)	4853.80 (32.23)	13503.20 (30.31)	3367086.20 (269221.39)	83320.65 (27259.31)	875078.75 (302148.70)	4308419.55 (1287319.19)	83392.55 (4648.28)	1631.20 (17.53)	1000.45 (10.76)
4000	1867684.85 (845699.73)	3652008.60 (490052.88)	954610.85 (442418.72)	7435.20 (72.13)	22840.65 (111.06)	6974986.05 (588416.12)	147049.70 (8091.74)	1690251.75 (757801.98)	9484475.30 (4407289.13)	146282.85 (7880.71)	2217.35 (11.42)	1386.10 (10.92)
5000	2615146.35 (907600.62)	6269993.70 (918995.86)	1482041.00 (273587.27)	10534.60 (78.90)	34585.80 (189.74)	12003482.75 (691194.47)	231301.40 (16693.01)	2290053.65 (789854.63)	16060959.45 (5010987.57)	229371.70 (15464.79)	2797.90 (23.88)	1734.75 (10.49)
6000	5122091.70 (1463243.87)	9798417.80 (1338051.85)	2226550.35 (598221.26)	14106.45 (185.60)	48636.40 (169.66)	19070660.60 (867489.15)	331666.15 (21231.71)	4546721.40 (1297477.22)	25859076.10 (10159664.06)	332482.25 (23193.36)	3402.60 (37.56)	2101.60 (19.42)
7000	6386294.35 (2457780.10)	13291922.90 (1293404.49)	3334131.25 (971026.25)	18201.55 (225.29)	65195.05 (283.44)	27811612.90 (1236861.55)	460145.75 (21935.50)	5471075.25 (2124653.02)	33950228.85 (15036231.33)	458767.70 (21968.22)	4008.45 (27.00)	2456.75 (24.29)
8000	11768045.00 (4290323.59)	17938206.35 (2884968.39)	3545587.30 (863439.56)	22743.55 (269.49)	84046.50 (227.35)	38844766.20 (1518939.71)	590998.50 (29914.20)	10347228.15 (3826389.48)	56642160.70 (22471660.29)	589602.25 (27422.81)	4647.40 (60.13)	2817.60 (18.97)
9000	12161596.60 (2878379.96)	24287662.70 (3394867.72)	5406891.25 (1220191.73)	27723.70 (295.23)	111016.55 (17794.11)	52333780.20 (2011895.47)	762115.20 (31321.74)	10245559.95 (2305604.70)	69627738.65 (22916110.39)	757359.30 (31267.22)	5272.45 (44.43)	3246.15 (21.86)
10000	18930876.45 (6122956.37)	30073265.20 (2547779.04)	7448045.05 (3405761.11)	34522.85 (5642.25)	129145.10 (252.29)	68400456.45 (2120168.68)	926868.10 (31818.09)	17305336.10 (5730282.89)	115683322.10 (71935508.05)	926545.50 (33648.17)	5860.65 (40.25)	3622.10 (29.43)

Table 58: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 4-regular graphs of size n produced by Steger-Wormald algorithm.

n	OP1+EPS	PT+EPS	VSR+EPS	VR	VA	PT	OP1	OP2	T	IS	HL
20	154.02 (1.9.61)	173.22 (18.87)	124.90 (18.91)	24.58 (1.31)	35.54 (12.85)	26.02 (4.84)	30.38 (4.45)	70.72 (16.89)	23.22 (4.24)	8.88 (0.69)	6.86 (0.67)
40	381.78 (75.79)	514.78 (81.09)	311.48 (71.28)	59.16 (0.89)	141.30 (50.27)	58.64 (6.14)	75.86 (13.91)	413.78 (1255.71)	54.58 (6.17)	17.34 (0.75)	13.12 (0.92)
60	723.26 (148.32)	974.74 (113.08)	554.36 (190.31)	99.42 (1.05)	330.12 (118.67)	100.84 (11.33)	141.52 (33.26)	670.56 (1279.04)	94.42 (10.89)	27.14 (1.28)	19.06 (0.91)
80	1122.24 (253.25)	1595.64 (247.71)	770.98 (175.30)	146.06 (1.54)	622.44 (171.83)	305.48 (1082.64)	217.48 (47.92)	1005.68 (1201.22)	144.18 (16.40)	36.40 (1.46)	24.78 (0.95)
100	1509.76 (294.57)	2242.90 (257.94)	1023.78 (235.17)	199.92 (3.39)	1029.16 (265.76)	343.88 (1019.60)	302.48 (82.46)	1963.58 (3529.29)	192.18 (28.93)	47.70 (6.02)	30.94 (1.41)
200	4039.50 (757.58)	7550.44 (873.09)	2879.52 (623.44)	570.94 (10.77)	6397.02 (11838.65)	567.26 (82.58)	1118.12 (309.49)	5930.50 (1319.30)	546.68 (82.28)	97.28 (7.70)	59.94 (1.53)
300	7062.76 (1075.24)	15999.16 (1640.27)	5441.98 (1093.61)	1107.06 (11.69)	11645.10 (1687.32)	1187.42 (1013.09)	2295.20 (536.38)	14886.90 (4427.31)	1009.62 (161.93)	148.20 (2.51)	91.46 (1.79)
400	10516.06 (1768.55)	27550.40 (3215.35)	8581.88 (1660.46)	1842.10 (20.00)	24133.36 (5637.03)	1628.36 (2395.38)	4396.04 (1465.11)	27100.72 (6440.98)	1591.46 (273.41)	201.36 (2.83)	122.36 (1.88)
500	14085.92 (2494.19)	47279.44 (9135.56)	12346.60 (2930.72)	2791.46 (64.16)	39271.64 (5902.53)	2395.38 (289.89)	6867.26 (1797.14)	46382.26 (12673.90)	2334.34 (314.72)	254.14 (3.34)	153.14 (5.60)
600	18757.50 (2678.07)	63098.52 (9820.21)	16523.00 (3633.02)	3922.36 (38.62)	61833.24 (8110.05)	3359.26 (400.65)	10226.02 (2977.96)	69247.80 (16993.68)	3256.88 (394.13)	305.82 (7.86)	185.10 (5.42)
700	25880.66 (7398.44)	91132.26 (25170.60)	22841.90 (5582.60)	5269.12 (55.76)	88578.58 (11962.38)	7828.20 (23878.01)	14614.14 (3505.35)	113216.14 (38289.26)	4194.40 (629.47)	360.42 (3.18)	216.34 (4.56)
800	31968.62 (5495.10)	113463.26 (15175.57)	27267.96 (6303.33)	6800.06 (95.20)	121145.76 (13621.36)	5944.48 (1215.49)	19777.42 (4545.92)	135969.52 (34051.66)	5655.26 (694.36)	421.42 (14.61)	246.82 (3.40)
900	37192.86 (5839.12)	137825.76 (19537.89)	37801.56 (7966.94)	8528.62 (102.65)	163110.68 (16213.61)	6807.90 (811.35)	25310.72 (6212.02)	192221.78 (85676.87)	6640.10 (821.40)	472.20 (7.28)	278.80 (4.17)

Table 59: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 4-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	47554.88 (8976.50)	164980.24 (18999.48)	43389.60 (9624.42)	11996.94 (10675.53)	2653.58 (18.02)	210414.68 (25008.59)	8585.42 (1055.79)	33831.96 (9976.65)	218536.84 (50841.35)	8375.38 (1096.05)	540.40 (81.59)	310.72 (71.2)
2000	200199.20 (68232.06)	589827.05 (71433.96)	158617.45 (48519.12)	40957.00 (482.39)	8891.45 (34.42)	1121769.15 (80098.03)	31112.55 (2842.76)	168777.65 (53617.63)	1268052.90 (353895.88)	30014.85 (2523.55)	1093.05 (17.32)	627.45 (11.00)
3000	513955.75 (158810.40)	1445609.65 (317727.20)	363052.65 (115514.62)	90781.75 (480.52)	18425.70 (75.87)	2992743.60 (209877.46)	68556.35 (6250.53)	461040.50 (140923.40)	3563730.65 (1187322.48)	67174.75 (6162.85)	1733.55 (16.10)	980.10 (8.85)
4000	939506.10 (276799.93)	2507693.45 (343130.78)	589966.15 (146599.06)	161108.00 (544.91)	31159.55 (207.95)	6161214.60 (203222.55)	113171.15 (10538.59)	827898.00 (251226.22)	6923694.70 (2431169.71)	111632.95 (9724.35)	2369.95 (22.72)	1326.50 (11.23)
5000	1508471.95 (380504.39)	4456186.50 (639470.79)	961875.65 (240683.56)	257936.55 (30667.97)	47330.95 (207.95)	10540264.25 (434557.25)	176812.90 (13489.36)	1319702.65 (335130.75)	10528351.70 (4049815.81)	174812.10 (14746.03)	2980.30 (134.34)	1666.30 (14.52)
6000	2579361.05 (1037586.15)	7009912.95 (928298.22)	1636094.10 (316953.80)	365332.50 (3480.96)	66802.40 (262.89)	16697207.10 (903223.65)	266422.80 (20322.59)	2208472.20 (85634.318)	18889600.00 (6251133.34)	251187.35 (20023.21)	3607.60 (39.50)	2023.15 (69.28)
7000	3458613.50 (1265636.21)	9429433.50 (1239794.57)	255561.20 (54876.29)	505421.80 (20659.38)	89901.75 (685.36)	24112605.80 (945188.30)	360781.80 (29390.60)	2983112.75 (1094879.66)	26540751.35 (8985816.73)	360495.05 (51771.50)	4256.60 (27.80)	2373.80 (68.98)
8000	5252134.55 (1625218.06)	12753347.25 (963999.09)	373208.70 (694112.83)	657340.75 (10615.31)	119069.85 (15636.90)	34372122.05 (1613834.44)	462053.90 (34654.84)	4433953.50 (1294013.42)	39408116.50 (24771711.97)	454369.00 (35296.85)	4952.45 (152.30)	2705.30 (23.57)
9000	7385659.35 (1680183.48)	16629655.75 (1335561.84)	5480051.65 (1366826.48)	830290.40 (7290.17)	145232.60 (337.75)	45744412.95 (1906271.26)	587223.90 (312295.12)	6143347.45 (14144491.20)	56110826.55 (23669187.02)	579128.75 (32241.00)	5548.90 (51.12)	3159.05 (144.71)
10000	9893070.70 (3559016.10)	21329348.00 (2884327.73)	7509256.30 (1525808.55)	1027591.95 (8997.45)	180208.90 (10202.99)	597771743.70 (2145307.81)	742018.95 (37693.30)	8002527.15 (2697881.35)	88341517.10 (49867305.38)	727852.25 (36387.37)	6225.45 (49.27)	3483.10 (22.44)

Table 60: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 5-regular graphs of size n produced by Steger-Wormald algorithm.

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
20	156.14 (21.28)	174.08 (17.29)	146.42 (24.98)	30.32 (1.71)	25.72 (1.59)	36.54 (14.14)	26.28 (3.42)	31.50 (5.44)	75.60 (15.78)	23.16 (2.53)	9.50 (0.76)	8.66 (1.19)
40	411.30 (79.21)	479.82 (78.37)	1076.52 (5110.10)	75.76 (9.21)	55.78 (0.71)	125.20 (46.31)	61.50 (6.17)	73.98 (14.79)	242.76 (60.31)	59.00 (12.96)	18.58 (0.88)	17.30 (1.66)
60	714.46 (129.96)	943.26 (119.11)	635.78 (117.90)	125.70 (1.94)	87.86 (9.13)	294.72 (102.60)	252.44 (1058.06)	132.46 (27.11)	552.00 (129.22)	95.28 (10.46)	28.86 (1.32)	25.52 (1.49)
80	1062.70 (169.29)	1500.68 (179.32)	920.62 (183.72)	188.78 (5.93)	117.82 (0.94)	572.48 (156.38)	149.06 (21.06)	217.80 (59.59)	916.94 (210.15)	139.76 (17.04)	37.78 (1.78)	33.78 (2.28)
100	1458.84 (236.82)	2109.68 (260.37)	1140.10 (294.68)	257.74 (3.89)	151.02 (1.38)	866.46 (213.56)	211.06 (31.06)	301.70 (65.69)	1545.14 (504.81)	198.58 (27.62)	49.62 (3.45)	41.76 (1.82)
200	3958.52 (710.85)	6808.02 (969.33)	3240.74 (682.95)	757.42 (29.97)	337.18 (1.71)	4235.88 (1070.39)	566.00 (82.02)	1010.54 (285.93)	6275.54 (1467.29)	539.70 (80.68)	101.48 (2.44)	84.06 (3.58)
300	6762.66 (1199.55)	13560.54 (1672.58)	6557.32 (1664.08)	1501.64 (16.13)	562.00 (3.69)	10432.00 (2106.80)	1022.98 (180.49)	2243.58 (633.73)	15914.82 (4967.84)	978.54 (183.67)	156.28 (7.30)	125.96 (4.03)
400	12665.20 (18267.03)	23913.58 (8130.82)	10403.94 (2057.12)	2536.86 (26.16)	2027.12 (8504.89)	20805.10 (2764.54)	1707.70 (239.42)	3993.66 (1001.62)	30357.58 (8669.75)	1655.40 (264.24)	211.76 (6.43)	169.60 (4.87)
500	13292.46 (2254.07)	37240.18 (7875.94)	15123.20 (3234.71)	4683.92 (6006.37)	1124.66 (12.04)	34493.30 (4438.13)	2499.48 (364.35)	8964.42 (22315.73)	49854.48 (16819.14)	2417.56 (360.69)	268.66 (7.34)	213.82 (7.97)
600	17815.50 (2895.13)	50206.80 (6804.74)	21055.20 (5801.79)	5403.44 (53.65)	1458.76 (11.10)	52363.00 (7474.43)	3438.88 (559.33)	9053.32 (1743.00)	70432.70 (16355.61)	3338.72 (567.87)	323.22 (4.70)	256.78 (6.93)
700	21605.96 (3655.59)	75022.58 (10340.95)	27317.44 (4849.58)	7258.52 (82.17)	1832.84 (12.97)	78309.54 (9546.19)	4477.98 (1448.95)	12572.34 (2813.07)	108257.86 (35617.78)	4196.36 (667.52)	379.10 (5.74)	300.86 (8.47)
800	28484.62 (4967.67)	102770.80 (16543.64)	36938.08 (7887.14)	9367.06 (78.15)	3232.00 (6994.75)	104905.64 (13324.93)	5704.64 (660.76)	17103.20 (5069.99)	147153.68 (42468.59)	5515.32 (682.47)	437.50 (4.43)	342.36 (7.52)
900	33628.90 (6584.52)	135581.04 (26542.96)	46785.40 (11254.98)	11777.36 (134.34)	2694.78 (52.69)	142333.96 (17942.54)	6657.68 (945.75)	21913.72 (6679.03)	203555.80 (58658.09)	7187.50 (5133.74)	495.16 (9.17)	386.46 (6.68)

Table 61: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 5-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	44343.16 (10258.45)	164068.84 (22780.57)	59871.22 (13747.34)	15718.62 (8620.82)	3172.24 (19.94)	176631.28 (14787.29)	8409.08 (1206.70)	30526.22 (8293.54)	313097.60 (251326.25)	8195.86 (1196.46)	553.90 (10.77)	432.10 (9.29)
2000	138829.35 (34387.56)	654955.60 (77270.93)	247617.60 (58738.12)	57223.10 (497.77)	12971.00 (10351.85)	949007.35 (80366.19)	30341.25 (2955.32)	129341.05 (30869.22)	1456063.00 (456575.94)	29207.30 (2160.53)	1147.40 (24.43)	868.50 (14.45)
3000	403860.25 (123046.41)	1308030.00 (173420.59)	641695.75 (91498.85)	132171.35 (19912.42)	21948.60 (140.08)	2827106.05 (188753.83)	74273.30 (21895.62)	354226.65 (96924.01)	3274208.00 (894636.12)	66645.35 (12139.64)	1813.65 (9.32)	1355.00 (19.49)
4000	747124.65 (189312.06)	2285355.60 (266522.34)	1246560.90 (215003.15)	227799.65 (4873.96)	38645.30 (6574.66)	5094255.75 (233807.56)	113498.15 (7333.14)	663642.10 (172907.58)	7157729.55 (2785456.74)	112029.90 (8602.66)	2463.25 (27.91)	1833.20 (15.76)
5000	1272323.60 (410287.91)	3541943.10 (460194.60)	1769911.55 (266952.44)	355794.75 (4931.18)	60215.35 (17094.37)	8795091.95 (405706.11)	179908.85 (172864.0)	1132164.45 (359179.88)	11034589.65 (2961079.67)	176437.95 (20058.66)	3103.15 (40.86)	2309.40 (28.32)
6000	2104682.10 (605146.93)	5403345.10 (569321.74)	2770052.75 (435591.11)	517302.30 (14630.17)	80450.10 (4369.97)	13764811.13 (474250.53)	260798.85 (36805.71)	1828879.70 (517704.79)	20573786.65 (13521631.69)	249335.80 (20058.66)	3809.65 (4424.94)	3798.65 (4424.94)
7000	3121332.20 (1286010.12)	7571823.60 (938846.21)	4122739.10 (547112.94)	701330.70 (5765.18)	106619.00 (372.35)	20125309.75 (823659.72)	35054.50 (21292.80)	2719667.55 (1066311.35)	27463593.10 (11352192.96)	347978.80 (31192.97)	4442.00 (38.96)	3292.35 (42.43)
8000	4391192.55 (1245371.03)	10245766.20 (156842.08)	5095514.55 (577091.59)	917301.95 (9333.63)	141459.95 (16911.89)	28475859.05 (1001402.14)	453978.40 (23391.67)	3788135.95 (1060572.05)	36208590.60 (10072692.93)	447056.90 (28280.92)	5137.30 (26.33)	3751.30 (29.01)
9000	6098026.95 (1608284.66)	13815126.70 (1422591.67)	6896320.55 (1002305.49)	1160740.95 (7564.64)	173827.50 (838.8)	39822336.00 (3398016.80)	570606.10 (29326.62)	5172224.40 (1319985.26)	57069662.80 (22733529.55)	560527.70 (26742.00)	5871.20 (166.69)	4333.80 (154.62)
10000	7574650.15 (2100228.27)	16618894.00 (1204336.99)	9492555.20 (1388112.16)	1435608.15 (9018.53)	212917.15 (1776.09)	48985623.20 (1781635.28)	721299.70 (43763.62)	6277526.75 (1695320.79)	68256044.20 (39587485.12)	706975.40 (43603.55)	6531.40 (50.83)	4828.95 (43.20)

Table 62: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 6-regular graphs of size n produced by Steger-Wormald algorithm.

n	OPI+EPS	PT+EPS	VSR+EPS	VR	VA	PT	OP1	OP2	T	IS	HL
20	163.64 (21.81)	174.68 (22.04)	166.20 (23.77)	30.38 (1.90)	38.38 (14.17)	26.28 (3.42)	29.90 (6.22)	77.88 (14.31)	23.44 (2.36)	9.66 (0.63)	9.94 (1.10)
40	376.38 (65.13)	424.00 (61.71)	355.60 (54.29)	66.26 (0.66)	124.80 (41.70)	60.18 (6.38)	73.24 (15.35)	254.20 (47.21)	56.62 (7.89)	18.94 (0.84)	20.14 (1.40)
60	700.78 (111.53)	919.56 (140.21)	658.36 (106.69)	101.84 (0.87)	287.06 (84.29)	126.38 (130.52)	141.96 (25.96)	543.34 (149.08)	112.14 (93.65)	29.88 (1.65)	29.02 (1.57)
80	1044.42 (208.25)	1339.86 (187.66)	978.56 (168.08)	138.86 (0.99)	551.30 (152.76)	172.44 (119.13)	203.28 (33.52)	955.68 (200.35)	145.50 (19.58)	39.90 (1.73)	38.86 (2.29)
100	1456.94 (274.23)	1999.24 (243.91)	1234.86 (266.93)	177.58 (0.91)	854.90 (247.65)	238.68 (170.22)	288.22 (63.42)	1484.44 (327.17)	200.14 (24.37)	51.68 (1.78)	48.46 (2.47)
200	3789.16 (669.07)	6076.06 (832.70)	3565.58 (542.50)	395.60 (1.43)	3974.66 (761.89)	575.98 (91.21)	964.04 (227.44)	8737.08 (18297.72)	556.58 (125.05)	106.42 (2.76)	96.30 (3.51)
300	6310.36 (1020.88)	12081.90 (1307.10)	6574.48 (1099.68)	658.12 (8.24)	10980.66 (12135.52)	1079.22 (222.29)	2065.50 (435.01)	14405.46 (4856.22)	1006.50 (153.11)	162.08 (4.01)	144.48 (3.56)
400	9426.68 (1773.69)	22157.78 (11548.60)	10679.58 (1704.85)	960.76 (9.38)	17928.76 (2782.05)	1684.56 (240.13)	3715.94 (839.03)	31263.02 (10895.01)	1626.82 (244.05)	221.18 (7.58)	195.02 (5.43)
500	13949.44 (2375.83)	31594.44 (4950.79)	15352.78 (2353.05)	1304.86 (14.75)	30439.42 (4388.06)	2485.46 (475.52)	5826.82 (1371.46)	46800.68 (12407.04)	2379.66 (440.85)	280.00 (6.79)	244.60 (9.20)
600	17034.56 (2613.84)	46994.92 (7082.35)	21119.74 (3633.86)	1689.24 (10.59)	46902.38 (6411.62)	3324.80 (577.17)	8279.04 (1737.75)	70296.94 (17866.95)	3195.86 (554.81)	336.52 (7.27)	292.90 (7.35)
700	22691.08 (3280.62)	64359.36 (9314.20)	31503.48 (6302.86)	2116.22 (16.53)	67050.86 (7320.56)	4456.26 (719.34)	11899.60 (2556.60)	104587.90 (32660.71)	4300.04 (707.22)	395.84 (8.61)	343.92 (7.27)
800	27140.72 (4175.53)	87882.04 (11358.79)	39824.48 (5714.88)	2584.78 (14.26)	90391.08 (9690.09)	5602.06 (815.61)	15057.56 (3368.23)	140527.54 (46646.13)	5412.92 (782.83)	459.58 (13.52)	394.36 (7.89)
900	33710.50 (6236.62)	106947.32 (18392.09)	52485.28 (13653.92)	3095.86 (22.27)	123854.36 (14169.80)	6700.66 (953.87)	20169.42 (5835.59)	187917.56 (72506.65)	6477.02 (940.99)	509.84 (5.45)	444.94 (8.59)

Table 63: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 6-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	38166.22 (5057.21)	136119.30 (16265.35)	60521.54 (11104.09)	17140.12 (140.53)	4060.82 (2973.97)	157319.60 (15657.50)	8116.52 (918.72)	24772.88 (6232.61)	223017.38 (52172.32)	7883.54 (979.85)	578.26 (10.56)	497.62 (10.11)
2000	146315.15 (46306.21)	574048.95 (69851.09)	290928.65 (50837.07)	70698.30 (12441.73)	12090.75 (114.45)	804233.45 (72061.69)	29711.95 (2638.74)	123583.10 (4292.34)	1124571.85 (285776.32)	31714.85 (12026.66)	1190.60 (14.35)	1012.00 (15.13)
3000	342127.75 (91011.57)	1100424.40 (128552.25)	850195.30 (86270.89)	153536.05 (4413.08)	29315.05 (19977.16)	2211801.65 (144887.38)	64021.40 (5420.65)	295237.65 (79859.32)	2709355.55 (748805.08)	62071.95 (5461.35)	1891.50 (14.14)	1540.05 (22.79)
4000	641714.60 (133518.24)	1878873.55 (228348.15)	1798900.00 (232604.67)	274029.80 (10001.37)	42112.10 (158.02)	4409412.90 (213862.72)	115736.75 (10117.27)	571671.60 (122000.42)	5983882.10 (1270060.07)	112152.70 (8753.42)	2536.75 (148.32)	2115.00 (177.72)
5000	1054903.85 (270467.27)	2892544.25 (266448.06)	2940259.60 (237330.97)	435026.30 (43702.69)	64463.25 (3745.16)	7565090.00 (315552.89)	178880.95 (13578.79)	935446.20 (246124.64)	9453375.45 (2559544.96)	175349.95 (20688.01)	3256.85 (148.32)	2648.90 (20.47)
6000	1647223.05 (328640.24)	4233210.00 (508036.62)	4502492.90 (395359.12)	627286.50 (35695.05)	89558.40 (235.35)	11597146.30 (478052.55)	250779.20 (40021.56)	1461357.75 (296981.60)	17075550.15 (7171702.50)	239518.60 (38.72)	3934.30 (36.14)	3226.30 (32.66)
7000	2601909.00 (846176.83)	5799644.15 (599706.19)	6002554.35 (393600.43)	836647.20 (3436.60)	120233.60 (436.61)	17133821.25 (586056.24)	334937.10 (26559.41)	2260372.75 (748580.34)	23538026.15 (7348191.75)	329010.50 (27879.59)	4655.60 (67.08)	3776.20 (38.79)
8000	3255822.05 (615161.10)	8240609.15 (1039472.72)	7882320.10 (393600.43)	1097240.05 (7284.06)	155993.05 (4601.19)	23446714.80 (928371.07)	455914.20 (30817.24)	2733445.65 (550561.43)	30013279.65 (7348056.75)	445901.70 (28957.53)	5361.00 (46.25)	4327.20 (33.07)
9000	4678873.40 (1396612.37)	10275175.85 (762398.22)	10232287.00 (917925.92)	1389456.90 (10013.97)	195280.95 (3459.97)	31307543.10 (938507.94)	558882.50 (393332.05)	3960008.05 (1163613.59)	44744644.00 (12497938.91)	545786.95 (37902.31)	6085.05 (105.09)	4971.85 (43.46)
10000	6274080.05 (1957050.63)	13320714.90 (1153862.98)	12821592.75 (1026897.79)	1729134.35 (15377.23)	239348.40 (3364.68)	41447540.90 (1999397.41)	695910.25 (40284.39)	5182808.20 (1625101.03)	59631412.00 (25349777.84)	675508.55 (41781.74)	8790.40 (8430.01)	5362.60 (102.54)

Table 64: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 7-regular graphs of size n produced by Steger-Wormald algorithm.

n	OPI+EPS	PT+EPS	VSR+EPS	VR	VA	PT	OPI	OP2	T	IS	HL
20	223.28 (443.61)	377.28 (1452.12)	41.92 (4.04)	35.44 (2.28)	31.40 (12.64)	27.24 (3.99)	30.62 (5.40)	80.42 (14.59)	23.82 (2.43)	21.96 (84.43)	10.94 (1.35)
40	395.22 (64.35)	428.22 (65.85)	100.18 (1.10)	77.78 (5.44)	115.54 (39.60)	339.62 (1943.46)	73.40 (11.20)	265.74 (49.84)	59.50 (8.15)	19.86 (1.01)	21.80 (1.90)
60	705.92 (113.83)	866.82 (123.00)	169.22 (3.00)	119.38 (6.43)	264.98 (83.20)	104.24 (11.60)	132.56 (26.12)	584.82 (165.63)	96.68 (10.18)	30.22 (1.81)	32.62 (1.89)
80	1046.08 (206.70)	1316.04 (200.00)	250.26 (168.68)	161.08 (3.33)	484.96 (155.56)	156.76 (18.47)	195.62 (33.77)	934.56 (172.79)	147.04 (17.24)	41.56 (1.72)	42.60 (2.47)
100	1441.94 (182.69)	1903.30 (223.30)	345.04 (6.47)	205.94 (3.00)	726.96 (223.29)	213.36 (28.37)	289.92 (53.93)	1721.20 (1233.06)	203.10 (29.80)	53.34 (3.54)	54.16 (4.44)
200	3687.92 (585.09)	5484.00 (803.52)	2349.58 (9534.32)	456.78 (6.68)	3498.52 (793.45)	585.88 (78.27)	961.36 (242.88)	6295.20 (1928.19)	553.72 (77.14)	110.48 (7.34)	107.14 (2.90)
300	6395.62 (1348.18)	11184.80 (1668.67)	2020.36 (100.69)	759.46 (49.59)	8664.06 (1502.98)	1080.30 (165.08)	2011.26 (564.29)	15061.42 (4020.71)	1034.16 (158.77)	168.24 (5.94)	162.10 (5.40)
400	9331.22 (1412.67)	19262.38 (10850.97)	3350.58 (41.16)	1094.08 (7.22)	16556.56 (2178.13)	1663.38 (269.72)	3719.06 (2863.12)	29840.58 (9146.42)	1581.76 (261.86)	229.04 (12.96)	217.06 (7.06)
500	12951.10 (1827.31)	28385.20 (4013.80)	5047.18 (55.37)	1481.12 (11.37)	29475.94 (8398.61)	2524.18 (330.59)	5254.14 (1095.98)	46869.28 (14503.69)	2428.36 (341.37)	286.96 (4.98)	275.38 (7.88)
600	16630.56 (2650.69)	43023.42 (7095.15)	7113.50 (123.74)	1914.70 (13.51)	41973.80 (6675.87)	3360.78 (398.07)	7726.90 (1323.37)	70285.16 (19477.34)	3235.00 (403.75)	347.28 (4.48)	332.82 (9.77)
700	22510.00 (5208.92)	5720.30 (8402.57)	9489.28 (4241.80)	2394.26 (45.87)	60610.32 (5852.37)	4411.14 (640.72)	10970.16 (2776.10)	94876.94 (22168.05)	4233.64 (610.25)	410.98 (8.77)	387.14 (9.53)
800	25993.08 (4080.79)	79882.44 (10191.52)	34040.56 (5680.52)	2910.48 (21.05)	81883.08 (10546.63)	5709.00 (820.89)	13992.50 (3309.00)	130225.76 (44860.92)	5501.86 (785.41)	473.78 (9.36)	441.18 (11.24)
900	31375.68 (5435.26)	94089.78 (14771.74)	41008.80 (6793.23)	3483.66 (52.29)	109450.98 (18519.14)	6953.46 (875.38)	18539.46 (4478.97)	173974.82 (43313.17)	6714.94 (823.55)	530.28 (7.71)	496.32 (7.98)

Table 65: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 7-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	36576.32 (5458.25)	119404.24 (19734.65)	49430.16 (7008.49)	18953.60 (164.58)	4088.30 (22.66)	136998.34 (12778.98)	8014.28 (1080.16)	21273.04 (4074.15)	231462.80 (88466.29)	7774.82 (1092.89)	603.52 (71.65)	563.36 (64.73)
2000	127133.95 (27103.56)	538885.40 (79028.76)	160431.85 (20796.11)	76433.75 (7718.01)	13383.05 (106.58)	702624.60 (58545.42)	28115.40 (3288.11)	101968.50 (31567.71)	1003410.40 (201811.71)	27205.95 (3059.46)	1232.90 (14.74)	1133.45 (15.47)
3000	311501.65 (92506.48)	1208761.75 (133970.39)	389459.35 (63740.14)	167488.10 (700.38)	27425.10 (164.86)	1885423.40 (125593.72)	63802.95 (8403.87)	260869.15 (84623.81)	2643754.00 (740502.39)	63366.25 (8360.83)	1962.75 (27.39)	1722.35 (21.87)
4000	567624.55 (118779.00)	2060505.30 (192884.19)	712931.00 (152747.44)	299168.75 (3540.44)	46258.80 (298.06)	3708608.35 (217501.18)	112572.25 (8494.48)	501704.05 (108597.45)	5607454.25 (2853888.33)	109195.45 (8440.36)	265475 (307.08)	2375.80 (23.94)
5000	860794.90 (142663.78)	3006771.25 (424714.83)	1427025.10 (400438.87)	471257.30 (15751.90)	69703.00 (244.58)	6353620.30 (379238.59)	176104.60 (21493.54)	751060.05 (131577.97)	8656233.10 (3011990.88)	168014.70 (13910.99)	3342.35 (37.50)	2984.05 (27.75)
6000	1386792.10 (316382.08)	4300214.75 (549691.68)	2310699.80 (455142.62)	678879.15 (15751.90)	99244.60 (4846.40)	10041213.00 (796400.50)	245497.40 (20551.49)	1204613.95 (295240.73)	17277636.90 (5245168.88)	239605.00 (20821.15)	4060.05 (39.00)	3617.90 (32.68)
7000	2125711.60 (538336.09)	5804560.85 (577656.25)	3312172.20 (458677.07)	922759.40 (4929.77)	131521.35 (364.22)	14861506.45 (796400.50)	332970.40 (22417.39)	1816344.60 (472894.58)	21774100.30 (3918473.73)	328637.85 (25512.07)	4800.55 (42.05)	4236.80 (33.20)
8000	2869700.75 (616381.64)	7546889.60 (539551.29)	5146934.75 (593572.62)	1209809.90 (8399.54)	170432.10 (3451.18)	19837571.10 (841740.61)	434372.65 (30910.50)	2393221.30 (521461.07)	26909309.50 (4571605.49)	423809.85 (29778.67)	5482.80 (52.64)	4863.15 (44.21)
9000	3867465.40 (967390.66)	10111354.80 (1302172.82)	7311215.80 (1019378.74)	1550973.95 (10826.78)	212567.50 (457.97)	26909974.20 (1005423.41)	541245.20 (24831.02)	3097758.80 (793679.59)	52779924.75 (36602438.25)	530036.25 (22948.67)	6310.35 (66.88)	5567.70 (54.50)
10000	5603179.45 (1301115.50)	12355872.60 (1031821.12)	10063752.45 (1092280.17)	1926129.95 (68381.95)	261871.85 (7677.89)	34827149.25 (1151684.18)	686810.25 (46171.04)	4408910.20 (1072338.49)	51276078.45 (10338512.84)	674334.90 (44897.10)	7815.60 (3363.17)	6202.35 (46.26)

Table 66: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 8-regular graphs of size n produced by Steger-Wormald algorithm.

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
20	261.84 (666.65)	163.04 (22.92)	287.56 (726.13)	47.00 (2.60)	40.38 (2.63)	30.68 (11.32)	25.10 (2.85)	30.18 (4.86)	80.82 (11.13)	22.36 (2.65)	21.58 (81.45)	13.42 (6.46)
40	388.88 (59.74)	403.56 (59.17)	430.66 (62.35)	112.44 (1.62)	87.10 (0.84)	117.66 (40.92)	61.42 (8.63)	73.82 (12.22)	263.50 (63.58)	55.04 (6.17)	20.06 (1.27)	24.30 (2.25)
60	717.18 (111.33)	738.92 (107.41)	759.24 (115.93)	190.96 (10.58)	135.04 (2.57)	274.16 (80.94)	110.10 (19.16)	135.54 (26.10)	566.92 (101.71)	100.42 (13.18)	31.02 (3.15)	36.72 (2.35)
80	1017.28 (146.29)	1100.22 (168.48)	1105.22 (184.92)	278.86 (5.20)	183.08 (1.01)	450.50 (119.63)	162.68 (21.51)	212.36 (44.54)	1054.84 (484.44)	150.80 (17.56)	42.14 (2.05)	49.16 (3.05)
100	1399.04 (277.54)	1588.36 (211.86)	1460.08 (226.50)	390.68 (41.87)	234.22 (3.74)	751.80 (199.45)	208.56 (29.42)	289.44 (63.28)	1464.68 (276.16)	213.10 (98.63)	56.16 (9.10)	61.00 (3.42)
200	3664.58 (698.36)	4660.42 (610.46)	3939.88 (740.94)	1098.04 (15.30)	516.94 (9.21)	3413.28 (678.70)	581.00 (90.19)	931.82 (209.95)	6781.84 (1715.73)	543.52 (76.94)	112.68 (3.18)	122.38 (3.90)
300	6291.20 (1156.25)	8707.48 (965.02)	7304.42 (1065.49)	2179.80 (25.05)	1954.02 (7826.08)	7859.34 (1515.07)	1045.94 (137.13)	1911.32 (408.79)	15294.36 (3710.49)	1002.20 (138.59)	181.90 (53.94)	184.66 (8.22)
400	9411.62 (1488.68)	14810.34 (1738.60)	11175.30 (1832.00)	3634.22 (77.12)	1227.44 (10.87)	14955.02 (2346.69)	1701.56 (206.56)	3223.12 (820.87)	29347.48 (1716.44)	1628.76 (210.38)	241.88 (51.54)	251.82 (27.36)
500	12436.52 (1957.85)	21487.38 (2944.29)	16723.88 (2336.07)	5437.72 (126.53)	1664.28 (57.55)	25171.30 (3423.09)	2415.20 (396.55)	5194.08 (1168.37)	48380.14 (21964.26)	2303.04 (402.60)	303.58 (52.71)	311.78 (10.92)
600	16514.60 (2230.57)	31098.38 (11609.22)	24579.04 (4152.55)	7601.18 (111.93)	2132.08 (13.20)	39381.26 (5671.34)	3460.36 (515.02)	7370.82 (1665.36)	65434.08 (15974.62)	3302.12 (484.23)	359.00 (6.05)	376.58 (7.95)
700	21151.18 (5875.52)	39680.26 (4092.64)	33479.74 (6647.00)	10157.82 (109.67)	2653.20 (19.71)	52387.92 (7550.32)	4357.72 (585.61)	10106.88 (2314.60)	96342.40 (25355.38)	4180.98 (550.07)	432.88 (63.06)	439.12 (10.82)
800	25453.10 (3453.43)	50482.66 (5269.79)	44187.14 (8655.12)	13082.82 (140.15)	3226.18 (21.16)	73823.74 (9455.04)	5429.58 (594.37)	13723.74 (2817.94)	130528.50 (31554.96)	5264.72 (591.68)	494.98 (54.91)	506.40 (13.89)
900	31502.86 (4524.66)	64674.42 (7745.29)	51466.04 (10256.09)	17431.46 (6973.25)	4469.12 (4421.90)	96586.32 (10932.19)	7817.56 (6751.07)	16976.34 (3912.75)	180260.86 (66088.86)	6593.22 (765.65)	569.84 (81.12)	568.72 (12.98)

Table 67: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 8-regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	35834.20 (4946.59)	77939.26 (10009.80)	66140.60 (13655.93)	20168.40 (180.92)	4506.14 (20.61)	127768.30 (12432.00)	7894.52 (1207.00)	21526.58 (5033.96)	208852.64 (50808.80)	7638.66 (1191.23)	626.62 (65.55)	636.84 (30.03)
2000	126230.95 (27399.67)	293446.90 (38381.15)	361391.55 (46994.04)	79394.90 (709.66)	18752.60 (18840.78)	639818.65 (60802.69)	29518.60 (4263.21)	99214.65 (20928.23)	1003158.80 (246789.82)	28666.35 (4302.63)	1329.65 (122.23)	1317.55 (102.53)
3000	285175.55 (50438.84)	707071.00 (64912.57)	948521.80 (126624.33)	179362.20 (1061.22)	29712.95 (147.39)	1618449.85 (120976.39)	61336.15 (4866.94)	246879.95 (49482.75)	2712475.30 (1211727.91)	59589.65 (4948.74)	2078.95 (129.19)	1971.55 (30.13)
4000	544217.85 (131660.13)	1294140.10 (138613.05)	1799108.55 (137319.04)	316145.80 (4070.95)	49888.40 (210.97)	3326021.65 (182466.09)	110238.10 (9791.81)	462024.40 (120045.59)	5399187.80 (1565179.08)	108542.10 (9990.50)	2824.45 (133.95)	2693.30 (33.40)
5000	995729.75 (261731.03)	2272518.95 (288981.13)	3080142.30 (263953.39)	503575.15 (21056.54)	75261.15 (412.96)	5589732.10 (2477912.24)	172665.30 (15665.26)	853124.95 (337919.07)	11484759.45 (4190090.12)	167848.70 (17207.51)	3656.10 (204.81)	3397.30 (28.82)
6000	1594437.65 (389962.57)	3331087.15 (288981.13)	4339246.95 (482548.80)	718689.35 (11955.78)	106469.30 (3800.44)	8687631.60 (523307.95)	247695.25 (19208.83)	1336204.40 (339477.02)	13728292.35 (2856837.78)	240340.85 (17207.51)	4414.40 (204.81)	4107.60 (42.48)
7000	1955220.20 (358178.58)	4855884.70 (656658.00)	5896287.35 (655472.56)	975235.85 (10047.85)	141165.20 (371.23)	12715151.95 (613063.26)	333445.55 (25847.23)	1584647.10 (317401.85)	22049732.75 (7237191.12)	328214.25 (25198.51)	5192.75 (173.82)	4817.25 (35.65)
8000	3055664.35 (641832.79)	62929239.70 (616540.50)	7339698.80 (466646.92)	1289671.10 (13577.73)	182139.20 (517.15)	17606456.70 (792292.66)	426209.70 (30499.64)	2386795.55 (536074.35)	32056799.40 (9643393.52)	415162.75 (30502.77)	6000.00 (200.94)	5544.15 (53.72)
9000	4190276.90 (7729665.97)	8336609.05 (700512.45)	9738901.55 (1090663.21)	1649730.50 (17555.91)	228209.25 (501.50)	23696572.00 (1191598.40)	541633.60 (25416.98)	3131696.05 (652028.03)	41331423.90 (12079699.51)	532673.65 (24705.23)	6790.50 (136.96)	6540.00 (551.98)
10000	5391702.50 (870963.34)	10725366.90 (1122378.13)	12730557.25 (1189250.11)	2055898.55 (14300.73)	279450.15 (708.05)	30311747.60 (1106377.56)	682486.30 (42571.78)	3846969.10 (692999.66)	56268870.20 (19750437.50)	680393.20 (41102.93)	7984.60 (379.73)	7090.75 (45.42)

Table 68: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on 9-regular graphs of size n produced by Steger-Wormald algorithm.

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
20	302.30 (977.02)	361.48 (1345.81)	302.54 (739.72)	52.62 (2.96)	45.72 (2.70)	30.06 (7.74)	26.14 (3.56)	29.16 (4.36)	86.24 (15.64)	23.38 (4.20)	19.94 (66.40)	14.48 (1.31)
40	380.88 (53.17)	398.70 (51.77)	463.88 (54.15)	126.18 (4.44)	98.78 (0.84)	104.40 (38.85)	63.02 (8.69)	75.78 (11.70)	261.08 (52.00)	58.72 (9.05)	20.86 (2.84)	28.48 (2.04)
60	746.36 (155.73)	831.40 (143.98)	780.34 (427.12)	208.76 (3.90)	151.20 (1.09)	237.18 (77.91)	109.54 (15.53)	137.66 (24.61)	566.42 (120.95)	106.94 (34.19)	30.82 (1.52)	42.32 (3.26)
80	1090.82 (198.02)	1222.58 (197.26)	1168.40 (212.44)	305.00 (3.98)	208.14 (11.79)	447.28 (112.03)	159.44 (22.86)	200.18 (34.00)	945.02 (163.44)	146.68 (17.97)	43.16 (2.16)	56.02 (3.59)
100	1471.70 (268.28)	1787.88 (232.93)	1502.42 (220.66)	417.60 (6.65)	262.84 (5.56)	656.86 (153.67)	217.26 (31.15)	280.58 (57.56)	1611.60 (993.65)	202.98 (26.11)	55.44 (3.60)	70.76 (5.00)
200	3796.48 (481.80)	5075.30 (510.02)	4302.72 (741.53)	1204.72 (99.32)	576.20 (6.46)	3007.86 (518.34)	594.98 (65.62)	891.84 (161.41)	6280.86 (1973.30)	560.26 (64.90)	114.78 (3.45)	143.00 (5.13)
300	6403.58 (999.56)	9648.00 (1141.05)	7862.28 (2929.48)	2342.42 (31.21)	942.48 (11.16)	7457.84 (1365.78)	1090.74 (200.77)	1811.56 (322.98)	14773.48 (3877.12)	1063.26 (217.27)	178.22 (3.78)	214.82 (10.21)
400	12453.06 (1537.41)	15694.54 (2264.97)	11562.12 (1665.99)	3866.16 (41.06)	1358.50 (9.09)	13740.98 (2100.73)	1704.92 (234.87)	3246.08 (759.50)	28778.44 (8477.67)	1629.40 (234.58)	246.56 (37.61)	287.88 (8.51)
500	13295.66 (2055.32)	24999.08 (4859.63)	18395.52 (2723.81)	5804.34 (135.94)	1824.12 (9.30)	23550.80 (3288.71)	2355.36 (411.53)	4816.70 (1017.84)	46750.66 (15672.25)	2257.82 (414.37)	313.40 (49.21)	361.68 (8.36)
600	18594.24 (4007.80)	35380.30 (4822.22)	27458.88 (4802.78)	8043.50 (84.43)	2342.78 (11.74)	34928.10 (4813.22)	3431.18 (488.58)	7417.40 (1648.12)	64532.92 (15755.85)	3272.36 (465.83)	380.18 (51.55)	434.12 (9.73)
700	22459.52 (3433.54)	46458.46 (5208.44)	34983.76 (5207.93)	10778.98 (172.30)	2918.64 (49.85)	50394.34 (9321.71)	4290.36 (630.01)	9722.98 (2106.53)	93240.92 (23644.58)	4138.18 (604.65)	436.22 (34.45)	512.94 (12.64)
800	26590.68 (3677.63)	60324.52 (7471.43)	46232.40 (10168.54)	13816.12 (157.66)	3536.00 (45.49)	67267.30 (7002.61)	5529.20 (804.43)	12746.34 (3185.87)	141491.98 (77150.47)	5362.32 (809.26)	1144.48 (4479.15)	598.24 (97.62)
900	31175.60 (5435.66)	75969.70 (7519.57)	56467.88 (8058.45)	17339.78 (206.99)	4203.38 (48.72)	87638.70 (9976.01)	6517.00 (1041.75)	16085.76 (4162.75)	169777.36 (56082.76)	6270.44 (1087.76)	572.40 (38.98)	660.24 (11.76)

Table 69: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on g -regular graphs of size n produced by Steger-Wormald algorithm (continued).

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
1000	37056.14 (5678.57)	93880.72 (13355.02)	73146.18 (10055.94)	21265.98 (172.95)	4915.42 (4.942)	114881.16 (14659.44)	8015.32 (1043.29)	19749.62 (4802.41)	220232.68 (80276.30)	7749.72 (1027.30)	640.00 (48.11)	749.64 (93.39)
2000	118369.85 (18175.60)	386868.30 (30277.84)	426850.05 (46184.38)	83321.20 (465.51)	15656.60 (75.78)	568701.85 (46856.53)	28479.80 (2994.80)	83086.10 (14640.93)	1105131.95 (267424.41)	27503.15 (2932.93)	1330.40 (77.42)	1498.65 (16.61)
3000	259329.55 (41346.13)	846095.40 (97745.72)	1225547.75 (116504.41)	186072.70 (838.65)	31730.05 (86.89)	1493683.20 (117670.14)	58472.15 (7356.35)	208158.35 (40542.20)	2646297.05 (653501.27)	56675.70 (7442.60)	2137.10 (115.54)	2350.15 (32.94)
4000	533741.15 (165613.30)	1553181.20 (167274.40)	2177070.90 (135320.31)	331235.80 (3405.06)	54523.55 (5491.82)	2937354.75 (128758.36)	110713.60 (7233.64)	436725.80 (152665.63)	6077404.05 (232976.12)	111740.85 (18109.46)	2914.86 (151.07)	3157.30 (46.95)
5000	786854.00 (160432.05)	2227621.35 (224531.66)	3467792.55 (239460.62)	519634.70 (11133.36)	80300.00 (304.77)	4998966.95 (287897.29)	169267.95 (27943.73)	614372.60 (146135.95)	8448626.75 (2574194.75)	161646.85 (20007.29)	3706.40 (155.74)	3976.65 (33.42)
6000	1317823.35 (255633.93)	3206658.15 (315130.15)	5444418.45 (425818.13)	748660.85 (11133.36)	112355.45 (418.26)	7720930.60 (474081.20)	238281.15 (19522.03)	1038524.00 (232976.12)	14444290.60 (9789002.69)	234420.35 (20007.29)	4470.20 (155.94)	4832.50 (167.96)
7000	1978468.80 (450224.12)	4340066.50 (455816.90)	8206017.65 (2848628.57)	1018659.80 (9968.17)	151413.35 (3300.31)	11271298.60 (531634.97)	324307.40 (26096.81)	1509502.40 (380606.60)	21122101.30 (5955403.68)	318369.40 (26015.92)	5372.15 (212.32)	5607.20 (57.22)
8000	2745002.85 (509566.47)	6175638.70 (58692.81)	9900681.85 (872673.39)	1339076.05 (7201.30)	196072.25 (4075.95)	15586386.50 (653388.99)	420685.35 (31373.23)	2029785.60 (452033.73)	30082903.60 (14433577.77)	460910.00 (29080.06)	6181.50 (265.16)	6472.55 (64.83)
9000	3810644.80 (966423.94)	7962734.75 (841882.72)	12359438.60 (245836.43)	1709226.10 (10992.61)	245545.20 (7817.32)	20589956.10 (841284.89)	539406.00 (31339.68)	2703878.85 (851270.28)	32528952.80 (7435218.06)	536983.05 (30440.89)	7151.10 (133.52)	7402.85 (65.70)
10000	5515079.90 (1156367.78)	10308179.10 (1233660.61)	13421154.65 (1178700.82)	2175140.50 (30765.31)	298694.75 (3478.29)	26983516.90 (847131.75)	669805.80 (33831.21)	3871342.05 (963031.37)	54933168.40 (20118806.86)	667336.30 (31469.63)	8665.95 (3336.82)	8270.15 (65.86)

4.3 Tests on Graphs Generated by the Classical Method

Table 70: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 3 produced by the classical method.

n	OP1+EFS	PT+EFS	VSR+EFS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	114.38 (25.48)	134.50 (25.70)	82.42 (23.08)	18.06 (3.55)	17.76 (3.31)	31.92 (14.42)	25.66 (3.37)	27.78 (4.25)	45.60 (12.91)	22.42 (2.54)	9.60 (0.81)	7.62 (1.09)
40	310.56 (78.48)	397.68 (72.72)	193.88 (51.60)	39.44 (4.30)	38.30 (4.08)	100.86 (43.55)	56.18 (6.10)	62.10 (11.33)	132.80 (38.51)	49.20 (5.77)	18.30 (0.76)	14.22 (0.91)
60	741.94 (1197.20)	752.86 (181.78)	336.52 (94.15)	63.24 (6.38)	60.22 (5.79)	232.78 (105.36)	93.48 (16.53)	106.56 (24.83)	263.54 (77.84)	82.16 (11.49)	27.60 (1.03)	21.02 (1.49)
80	783.10 (204.21)	1214.76 (185.82)	484.22 (151.27)	86.04 (20.57)	79.12 (6.36)	394.64 (186.20)	132.08 (24.58)	159.10 (32.84)	431.18 (146.73)	115.92 (16.72)	37.92 (3.26)	27.02 (1.53)
100	1043.10 (235.72)	1676.62 (322.98)	666.24 (240.12)	108.86 (11.09)	103.22 (9.18)	624.42 (245.88)	178.58 (25.94)	231.62 (57.47)	734.72 (227.71)	153.24 (20.21)	47.88 (2.04)	33.80 (1.82)
200	2901.06 (1040.20)	6063.96 (878.78)	1993.16 (834.22)	234.16 (15.49)	218.38 (16.71)	3005.80 (794.22)	652.40 (994.88)	724.00 (191.07)	2832.34 (619.31)	451.92 (86.65)	99.74 (4.15)	68.66 (10.73)
300	4761.84 (1511.55)	12289.80 (2019.21)	3287.12 (1206.67)	371.86 (23.73)	340.82 (18.11)	7545.60 (1687.16)	2108.60 (8072.00)	1500.68 (338.58)	7485.68 (2659.35)	813.80 (143.32)	162.02 (75.40)	97.86 (3.71)
400	6486.26 (1700.16)	22313.90 (4401.87)	5904.90 (1991.22)	536.30 (26.07)	486.32 (21.72)	15724.16 (3401.43)	1705.40 (1099.69)	2727.80 (718.40)	13486.66 (3299.61)	1318.14 (211.86)	725.88 (3659.37)	130.76 (3.77)
500	8911.78 (1995.17)	37112.80 (7139.43)	7651.26 (3152.62)	719.68 (62.90)	633.98 (27.86)	23248.54 (5090.12)	2398.66 (333.06)	5319.72 (6777.27)	23516.60 (6047.63)	2015.62 (334.76)	259.10 (7.66)	164.68 (9.03)
600	11905.38 (2807.97)	52432.86 (9641.63)	12637.76 (13904.89)	890.20 (40.63)	797.48 (30.61)	36630.40 (7112.92)	3185.86 (1146.36)	5679.92 (1476.73)	34666.34 (12607.55)	3448.60 (6498.25)	317.54 (9.06)	197.42 (4.77)
700	14130.60 (2727.64)	68353.24 (11728.11)	16111.76 (7617.95)	1094.44 (49.50)	968.86 (37.31)	53129.82 (20156.68)	4258.34 (1194.93)	8078.62 (1869.90)	51017.24 (12157.12)	3350.32 (466.53)	374.54 (5.89)	231.34 (4.71)
800	18050.50 (5396.05)	98517.86 (20242.06)	20390.78 (10850.73)	1327.00 (60.41)	1167.26 (42.50)	72995.80 (10185.87)	5354.00 (1191.66)	10394.10 (3087.24)	66615.94 (22430.14)	4241.96 (480.69)	431.34 (7.34)	263.18 (5.40)
900	20990.34 (4423.80)	125775.66 (26969.55)	24775.38 (10698.89)	1576.78 (85.67)	1694.28 (2161.70)	96016.20 (16650.98)	6369.60 (896.33)	13986.64 (3723.73)	90111.88 (24705.94)	5027.06 (761.48)	487.72 (12.59)	299.02 (7.96)

Table 71: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 3 produced by the classical method (continued).

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VA	PT	OPI	OP2	T	IS	HL
1000	24819.48 (5841.81)	168321.34 (41252.77)	30610.04 (14405.57)	1830.04 (67.86)	120120.60 (14725.97)	7707.52 (961.30)	16638.34 (4838.54)	121598.42 (98754.06)	6291.98 (835.08)	539.72 (8.09)	329.58 (6.57)
2000	82434.75 (32992.70)	623140.75 (121818.93)	120146.30 (59780.22)	5617.70 (211.19)	645024.80 (68867.82)	28046.75 (3630.04)	71974.00 (42826.16)	560432.65 (120025.19)	22075.60 (1911.03)	1716.30 (2661.83)	672.90 (15.96)
3000	195946.00 (41586.38)	1449157.70 (248701.81)	219256.35 (83125.51)	21308.30 (30046.39)	1730512.90 (175510.58)	65289.45 (5184.74)	172133.35 (44661.40)	1664871.75 (415929.95)	53002.65 (7736.23)	1817.60 (46.28)	1062.40 (16.36)
4000	319134.75 (65601.10)	2512465.75 (285173.29)	628443.70 (391729.07)	14654.75 (622.64)	3601729.60 (317967.89)	106916.85 (7834.68)	280516.95 (63626.66)	3220411.20 (720701.68)	85496.65 (5601.35)	2420.00 (13.92)	1408.15 (20.51)
5000	587557.80 (159613.55)	4642191.35 (970940.69)	849690.15 (482319.24)	28329.05 (898.23)	6227145.00 (453425.12)	172975.60 (9305.83)	531432.15 (148496.06)	6897325.45 (1847820.08)	135949.80 (7067.07)	3093.25 (22.62)	1781.30 (23.21)
6000	948085.95 (413884.59)	6434451.25 (894445.65)	1234223.05 (443273.21)	38900.15 (1265.66)	9640413.10 (487042.06)	245704.15 (24561.50)	837557.30 (376554.80)	10044361.20 (2291715.19)	185185.70 (13463.84)	3769.20 (34.63)	2131.90 (31.15)
7000	1195032.25 (350924.10)	9551157.15 (1352537.14)	1723852.40 (628499.70)	52497.65 (1017.21)	14276740.75 (549848.15)	336460.35 (22758.91)	1058815.40 (309535.95)	15457611.80 (3800449.98)	260261.75 (19873.82)	4452.45 (165.71)	2503.90 (32.05)
8000	1634720.25 (542974.08)	13459241.25 (2444398.17)	2416563.70 (766235.68)	69068.15 (7333.74)	19935632.20 (1231596.32)	440701.25 (26369.54)	1504508.70 (522812.33)	24161944.20 (11024436.41)	337426.65 (20865.34)	5094.65 (41.50)	2858.00 (38.94)
9000	2645014.85 (1148297.27)	17456945.60 (3019697.68)	3501746.95 (1568740.69)	84049.55 (2433.68)	27033187.15 (1563615.70)	571438.20 (27716.62)	2487652.15 (1123372.21)	30380355.30 (6573101.10)	434577.45 (17519.21)	5735.30 (20.51)	3376.70 (152.59)
10000	2570636.20 (475310.40)	23415203.20 (3772770.65)	4584349.85 (1618445.09)	102867.45 (2663.06)	33918109.25 (1679652.80)	693922.00 (30801.78)	2313402.80 (452835.79)	36888216.35 (7626677.51)	523854.15 (26377.72)	6526.00 (63.07)	3683.70 (47.82)

Table 72: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 4 produced by the classical method.

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
20	135.72 (24.17)	157.40 (21.17)	113.30 (24.78)	23.78 (7.65)	21.86 (2.56)	35.44 (16.06)	28.30 (6.42)	29.44 (4.72)	58.42 (14.98)	23.96 (3.50)	10.16 (0.68)	8.18 (0.98)
40	352.04 (72.39)	476.44 (80.55)	287.62 (70.86)	51.66 (4.05)	49.10 (3.64)	126.42 (41.23)	62.04 (10.05)	70.96 (12.12)	360.76 (1239.55)	54.58 (7.19)	20.42 (6.82)	16.40 (1.37)
60	584.54 (127.91)	902.58 (149.32)	423.58 (104.37)	83.30 (19.14)	76.08 (7.20)	291.24 (101.07)	105.30 (20.82)	124.86 (22.54)	375.54 (116.15)	88.86 (11.71)	29.40 (1.54)	24.08 (2.10)
80	870.00 (197.34)	1380.04 (219.55)	644.40 (161.39)	108.92 (9.23)	102.36 (7.77)	532.80 (184.91)	154.34 (28.76)	190.82 (41.93)	781.48 (1165.01)	132.96 (20.82)	39.66 (1.72)	31.54 (2.04)
100	1262.96 (280.43)	2020.38 (354.21)	929.82 (205.24)	142.14 (7.99)	133.38 (8.81)	876.66 (277.43)	215.94 (46.72)	266.76 (52.36)	983.52 (172.71)	182.68 (26.64)	50.48 (3.33)	40.00 (3.38)
200	5702.52 (18756.13)	6713.02 (1208.56)	2738.98 (3175.41)	318.04 (16.87)	287.20 (14.91)	3965.22 (997.64)	639.74 (105.60)	905.24 (218.11)	4690.40 (1918.37)	529.04 (156.62)	104.40 (3.04)	78.56 (6.20)
300	5059.94 (1302.89)	13867.46 (1755.91)	4227.70 (1454.76)	516.22 (20.27)	453.42 (13.80)	9423.76 (1734.84)	1289.48 (240.44)	1820.64 (404.01)	10961.02 (3056.68)	988.88 (153.86)	161.78 (9.19)	116.06 (7.52)
400	7238.84 (2092.94)	27569.54 (13606.34)	6291.92 (2613.32)	737.62 (29.80)	643.56 (20.58)	18238.60 (3732.05)	2137.58 (1092.57)	3129.72 (567.92)	20286.02 (4800.24)	1559.96 (265.16)	220.22 (8.46)	607.70 (3207.43)
500	9645.90 (1677.30)	42089.46 (6180.73)	8530.60 (3809.58)	3294.30 (16220.48)	858.90 (32.29)	31067.58 (5478.96)	3031.16 (467.55)	5241.30 (1174.14)	34935.38 (8917.19)	2351.12 (334.00)	274.20 (3.84)	191.60 (6.76)
600	12401.00 (2613.53)	61996.40 (12792.41)	13665.76 (6235.01)	1281.38 (55.52)	1084.40 (37.27)	46514.24 (7169.91)	4172.24 (1168.05)	6850.32 (1515.99)	52320.18 (13784.35)	3144.38 (518.87)	333.78 (6.24)	230.10 (6.98)
700	15449.66 (2693.49)	86936.34 (14687.82)	17062.74 (6311.15)	1618.08 (67.04)	1350.62 (35.54)	67196.98 (10615.84)	5586.14 (1378.34)	9295.60 (23119.94)	77826.00 (23119.94)	4155.44 (608.03)	397.22 (7.47)	270.78 (9.12)
800	18882.52 (3191.37)	113516.00 (18000.51)	23767.28 (12500.33)	1981.08 (65.49)	1623.44 (39.62)	89884.50 (14381.32)	7133.24 (1532.06)	12134.96 (2682.73)	103634.82 (30441.45)	5348.86 (705.45)	454.94 (6.28)	310.88 (11.34)
900	23465.34 (5682.32)	126284.04 (22366.60)	26017.72 (9839.99)	2341.08 (99.33)	1898.52 (48.62)	124073.96 (17059.48)	8136.34 (1293.96)	15109.20 (3685.22)	127600.92 (23497.15)	6249.22 (888.46)	513.04 (8.82)	346.16 (10.92)

Table 73: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 4 produced by the classical method (continued).

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
1000	30482.68 (26713.82)	149436.42 (25623.86)	37293.50 (13432.57)	2762.38 (98.82)	2440.34 (1614.94)	160043.18 (19039.23)	10239.52 (1778.99)	18210.60 (4012.06)	175344.30 (61442.88)	7554.74 (1093.45)	569.98 (7.02)	384.12 (9.01)
2000	89932.30 (13787.61)	633469.20 (145240.44)	99038.95 (36682.38)	9023.45 (365.19)	6744.50 (198.70)	831582.05 (68484.99)	38326.00 (3372.93)	74278.55 (12702.23)	871624.20 (260518.51)	31454.80 (15305.66)	1189.50 (15.37)	773.15 (15.95)
3000	225414.65 (54356.23)	1510442.40 (254853.64)	223296.65 (85270.56)	18559.30 (554.22)	13471.95 (250.13)	2202154.90 (277616.65)	89883.35 (10256.46)	195447.10 (47387.43)	2378786.25 (598147.05)	63282.40 (4068.22)	1910.85 (19.56)	1251.05 (159.01)
4000	441621.80 (99446.23)	2911449.45 (529038.76)	493014.10 (222497.16)	31068.65 (871.93)	22236.30 (373.13)	4436363.10 (330677.35)	153786.00 (12308.92)	393360.05 (90693.82)	4787366.60 (1706214.10)	109228.80 (9583.95)	2555.00 (25.98)	1634.25 (17.47)
5000	668571.80 (171666.76)	4932840.30 (786104.97)	843113.65 (245324.99)	47128.90 (888.90)	33180.35 (429.26)	7644330.15 (621173.52)	240484.25 (16271.50)	594614.90 (150857.70)	8834056.90 (2382116.45)	174257.35 (10987.13)	3260.15 (18.03)	2052.25 (18.20)
6000	1081645.60 (313215.85)	7236460.60 (790064.89)	1454129.95 (689901.79)	67378.05 (3518.46)	46348.05 (664.97)	11811583.10 (663190.86)	346963.50 (30145.27)	960524.50 (281102.61)	13284443.75 (4470194.08)	240533.90 (13814.66)	3961.55 (39.40)	2466.50 (26.86)
7000	1456979.20 (327680.50)	10378326.65 (1081222.24)	1888000.55 (1001389.12)	88829.05 (1925.03)	63265.20 (8437.85)	17280498.60 (802710.04)	463904.95 (26462.08)	1301819.30 (300108.40)	22037394.80 (6874258.38)	326091.15 (25022.94)	4674.75 (152.19)	2888.25 (29.58)
8000	2061506.95 (357344.59)	14686810.90 (2066158.46)	2140298.40 (529683.48)	115961.40 (3432.95)	78442.20 (1081.20)	24655385.10 (1299875.68)	615945.05 (34265.42)	1834714.35 (328528.60)	32121895.30 (14095016.28)	435741.95 (24372.82)	6594.75 (5552.56)	3308.35 (29.68)
9000	2699808.15 (721345.81)	20155838.65 (4099808.98)	2757066.15 (1141592.92)	145095.30 (4127.51)	97857.05 (905.75)	33244365.45 (1350487.63)	785504.35 (39723.75)	2379163.25 (675381.14)	38979571.35 (8880118.02)	549448.90 (36090.08)	6107.25 (161.07)	3861.60 (129.44)
10000	3304385.35 (504785.65)	22929321.40 (1855598.33)	3714375.40 (1433578.53)	177772.65 (4278.70)	120450.40 (3664.70)	41511271.25 (15225889.51)	965461.90 (52594.49)	2922419.75 (480066.23)	52887042.30 (10700080.75)	674475.55 (39437.25)	6882.75 (65.07)	4278.60 (39.54)

Table 74: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 5 produced by the classical method.

n	OP1+EFS	PT+EFS	VSR+EFS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	137.74 (19.76)	156.50 (18.02)	133.78 (24.43)	28.76 (3.68)	27.64 (4.36)	35.46 (14.13)	29.70 (6.04)	30.66 (5.22)	65.40 (13.98)	23.52 (2.43)	10.70 (0.68)	9.86 (1.29)
40	358.16 (84.22)	463.74 (64.78)	301.22 (75.28)	62.36 (6.55)	59.04 (5.89)	125.38 (53.89)	64.32 (11.15)	74.40 (14.13)	220.00 (49.00)	55.42 (7.11)	20.60 (1.71)	18.70 (1.88)
60	2455.40 (13144.21)	871.14 (133.46)	523.44 (141.91)	97.94 (5.57)	92.48 (6.49)	309.44 (108.69)	261.48 (1038.62)	140.30 (32.60)	455.32 (117.27)	95.90 (14.67)	30.74 (1.45)	27.14 (2.15)
80	891.68 (208.16)	1383.86 (201.36)	744.04 (197.82)	137.36 (8.01)	127.14 (6.74)	526.50 (172.51)	325.42 (1009.27)	217.58 (48.61)	814.44 (172.05)	143.18 (19.37)	76.34 (2.28)	36.36 (2.82)
100	1253.28 (280.48)	2001.38 (310.73)	1018.72 (226.49)	170.44 (10.42)	157.20 (8.33)	2258.86 (9808.04)	378.92 (1000.85)	289.42 (59.19)	1272.94 (346.37)	195.48 (32.70)	52.44 (2.00)	44.56 (3.76)
200	2862.82 (600.10)	6317.38 (949.13)	2213.68 (669.11)	388.06 (18.70)	345.54 (15.75)	3956.18 (828.89)	834.76 (1030.78)	965.68 (230.88)	5306.72 (1609.49)	512.34 (77.44)	108.94 (2.80)	87.94 (3.67)
300	5217.24 (949.15)	13242.40 (1856.82)	4364.90 (1469.53)	637.50 (25.07)	560.42 (50.40)	9630.44 (1595.63)	1718.96 (1123.93)	2110.88 (559.57)	15545.30 (16335.47)	1100.88 (179.84)	168.32 (5.48)	131.78 (9.29)
400	7390.06 (1102.90)	23296.94 (3218.21)	6853.14 (2174.47)	937.96 (33.94)	797.94 (23.38)	20484.86 (1595.63)	2633.58 (490.91)	3399.08 (818.32)	25302.60 (5873.67)	1796.48 (327.15)	228.62 (5.58)	174.64 (8.53)
500	10060.12 (1826.86)	36644.74 (6403.73)	9880.24 (3067.92)	1280.54 (43.23)	1071.22 (31.50)	33199.44 (1971.23)	4093.78 (1452.04)	5706.10 (1101.75)	44469.96 (12267.13)	2649.80 (363.87)	287.72 (4.43)	219.50 (8.95)
600	13501.90 (2223.85)	56163.74 (10475.65)	12941.88 (3980.31)	1652.16 (64.60)	1382.50 (64.60)	50033.74 (9381.15)	5357.56 (856.50)	8338.54 (1766.23)	67571.14 (17050.02)	3573.14 (475.48)	727.02 (2647.91)	260.96 (7.44)
700	17193.18 (3171.88)	88157.28 (17665.33)	21590.34 (7433.46)	2070.32 (74.41)	1669.90 (33.23)	6894.66 (10195.79)	7423.90 (1629.94)	12165.02 (2826.50)	93546.22 (22226.68)	4723.18 (835.27)	415.56 (9.46)	305.42 (8.67)
800	20829.10 (3014.82)	119875.82 (40896.87)	29680.14 (12319.81)	2544.00 (100.59)	2011.96 (51.74)	95191.86 (19273.10)	9235.56 (1764.51)	14676.12 (2734.68)	139959.06 (30903.57)	5337.22 (775.81)	476.74 (9.34)	350.98 (9.11)
900	26787.54 (8190.41)	142137.44 (22407.46)	36563.28 (14801.65)	3090.18 (115.50)	2401.24 (54.32)	124036.64 (15567.96)	11497.90 (1767.19)	19112.26 (4480.22)	205161.44 (114708.95)	7465.46 (1021.75)	534.72 (6.31)	393.72 (12.65)

Table 75: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 5 produced by the classical method (continued).

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
1000	32206.90 (6565.05)	183557.16 (40353.60)	44986.16 (15719.62)	3623.70 (125.04)	2801.60 (137.86)	163837.90 (19459.01)	14246.92 (2346.96)	24361.32 (6549.01)	238718.14 (86899.83)	9263.72 (1118.88)	599.08 (11.53)	437.90 (11.81)
2000	132561.60 (35143.53)	696433.30 (76599.49)	172816.70 (75255.41)	11848.45 (307.08)	8525.00 (128.16)	850886.65 (88373.14)	55574.20 (8863.93)	108502.45 (23976.73)	1545846.00 (781826.13)	34357.20 (3873.35)	1237.05 (20.98)	888.00 (30.59)
3000	290550.65 (82044.46)	1399470.90 (183862.65)	327730.10 (94584.73)	24800.45 (552.78)	17140.20 (232.17)	2276504.50 (113987.93)	123801.35 (14041.08)	260036.30 (71996.87)	3141103.80 (682268.48)	74353.25 (5906.77)	1986.30 (15.94)	1382.15 (12.58)
4000	602433.05 (125562.77)	2572831.80 (383340.40)	527425.20 (163777.17)	42569.55 (776.90)	28483.40 (193.50)	4540553.30 (288540.67)	227163.35 (20268.49)	541292.35 (115739.62)	7769267.50 (3408018.27)	134804.55 (10187.12)	2658.80 (27.91)	1889.60 (159.04)
5000	787966.45 (197406.87)	4440854.70 (1010218.21)	905616.90 (275452.89)	64449.05 (1374.37)	42773.40 (662.39)	7567035.75 (343442.30)	343082.85 (32704.94)	710434.25 (175648.19)	10659284.80 (3960071.33)	226121.65 (49582.86)	3401.00 (35.59)	2334.60 (38.66)
6000	1463609.35 (474342.74)	6695592.50 (1004150.79)	1185077.85 (443078.61)	91404.05 (1933.46)	60254.65 (3143.39)	12061757.60 (596638.86)	481900.05 (24132.31)	1315633.45 (440027.36)	19302621.45 (6506518.09)	289977.00 (22658.17)	4121.60 (26.58)	2816.20 (48.00)
7000	1927884.70 (581501.60)	9517299.30 (945690.98)	1987544.20 (629367.66)	122596.40 (1767.87)	79205.55 (743.26)	17585634.45 (841848.73)	674053.90 (47603.23)	1725136.45 (532769.71)	25786952.60 (7653326.65)	405017.55 (22944.84)	4851.20 (37.94)	3304.70 (91.10)
8000	2604721.55 (664963.45)	13348294.90 (1258174.84)	2704376.40 (861482.58)	159569.55 (3324.76)	101630.55 (860.63)	24805580.25 (1127090.24)	899105.85 (52355.55)	2337236.30 (616785.89)	39900953.50 (14307228.48)	540001.75 (31643.09)	5580.85 (43.49)	3803.00 (159.28)
9000	3305834.70 (765884.34)	18132680.25 (3299998.30)	2953854.70 (878262.30)	201078.90 (4009.28)	129093.10 (7073.96)	33242928.05 (1384619.12)	1131282.60 (73483.88)	2963308.30 (714864.81)	54767146.90 (28797182.22)	690631.75 (39649.28)	6381.30 (65.56)	4406.15 (125.28)
10000	4567760.50 (1075015.26)	21344161.90 (2485492.54)	3709795.40 (1386959.83)	247354.30 (4613.84)	155374.40 (1665.37)	42663560.45 (1711230.52)	1381904.95 (69781.70)	4072747.05 (1033390.53)	64027299.75 (10333884.15)	832828.55 (39446.06)	7212.30 (80.61)	4910.00 (67.43)

Table 76: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 6 produced by the classical method.

n	OP1+EFS	PT+EFS	VSR+EFS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	140.50 (21.32)	163.90 (19.27)	143.90 (27.24)	32.36 (3.08)	31.20 (6.68)	39.20 (18.44)	29.60 (6.82)	32.36 (5.33)	77.46 (16.74)	24.20 (3.20)	10.80 (0.70)	10.92 (1.31)
40	357.38 (52.05)	470.92 (63.12)	357.62 (70.86)	76.08 (9.31)	71.08 (7.01)	147.36 (51.96)	76.34 (17.57)	82.06 (18.41)	250.08 (50.90)	57.90 (7.15)	21.40 (1.40)	21.48 (1.80)
60	608.76 (116.05)	863.48 (121.20)	591.06 (136.70)	116.40 (9.09)	108.70 (8.09)	318.68 (109.42)	131.22 (29.01)	150.58 (29.01)	524.96 (132.60)	100.68 (14.04)	31.74 (1.50)	30.76 (2.25)
80	861.08 (171.54)	3078.56 (11765.10)	841.34 (205.06)	159.04 (10.93)	146.86 (9.59)	537.08 (188.47)	207.00 (48.50)	227.40 (38.58)	1122.94 (1146.27)	145.92 (23.44)	42.82 (1.52)	40.32 (3.14)
100	1158.88 (238.55)	1893.48 (309.92)	1044.08 (238.04)	206.94 (11.95)	190.46 (10.72)	928.38 (273.44)	285.42 (64.02)	338.96 (72.23)	1557.50 (392.68)	206.64 (36.18)	55.06 (2.04)	50.96 (3.01)
200	2920.12 (587.01)	6071.70 (902.94)	2617.44 (627.23)	461.70 (21.90)	411.08 (18.56)	4026.06 (880.80)	889.22 (204.50)	1100.78 (206.10)	6050.02 (1427.36)	590.22 (88.65)	113.70 (2.92)	98.00 (5.57)
300	4840.02 (849.29)	12984.90 (2014.02)	4925.12 (1397.05)	770.16 (30.80)	662.04 (21.41)	9119.92 (1770.48)	1760.22 (368.09)	2292.60 (513.57)	15228.40 (2916.62)	1107.14 (194.17)	174.76 (4.45)	146.38 (5.37)
400	7357.32 (1045.09)	21446.94 (3783.29)	7025.70 (1813.92)	1128.06 (49.57)	942.66 (25.75)	19537.50 (3063.97)	3008.12 (568.30)	3827.64 (568.58)	28848.82 (9112.03)	1841.10 (264.44)	237.76 (4.85)	365.88 (1204.14)
500	10471.18 (1400.68)	37523.94 (7400.22)	10028.36 (2979.19)	1527.10 (52.05)	1259.50 (38.19)	32085.28 (4951.33)	4412.02 (836.57)	6131.06 (1099.27)	46779.06 (11371.86)	2734.24 (419.96)	1221.68 (6521.74)	243.66 (7.68)
600	13863.18 (2328.03)	55802.42 (10365.19)	15929.22 (5016.34)	1899.50 (86.39)	1598.42 (35.71)	49644.66 (6971.91)	6370.74 (1013.24)	9278.58 (2135.61)	73215.96 (22997.87)	3840.74 (552.72)	362.96 (8.96)	293.28 (10.71)
700	17878.58 (2535.56)	81225.64 (13771.63)	21851.84 (7443.27)	2503.68 (72.66)	1980.14 (39.57)	69180.22 (13580.06)	8659.52 (1189.47)	12261.04 (2574.70)	103898.80 (25968.45)	4987.34 (6.27)	430.74 (6.27)	342.88 (9.80)
800	21750.56 (2822.14)	106260.30 (24459.23)	30322.74 (10784.68)	3064.26 (69.60)	2386.14 (41.74)	94405.36 (11332.21)	11202.12 (1757.21)	15619.26 (2726.26)	147311.06 (38951.74)	6430.40 (1028.93)	493.02 (5.76)	1184.00 (5594.96)
900	27391.18 (4242.84)	133840.02 (26724.40)	38663.98 (13738.55)	3718.10 (98.62)	2844.40 (53.93)	126301.48 (16762.16)	13838.44 (1879.40)	20464.62 (3970.46)	180985.86 (38774.10)	8041.96 (1160.02)	557.08 (9.47)	445.56 (14.50)

Table 77: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 6 produced by the classical method (continued).

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
1000	32478.32 (4695.94)	170526.48 (28029.57)	43333.04 (15505.61)	4425.88 (123.72)	3298.48 (51.56)	160016.08 (17408.40)	17768.24 (6818.34)	23857.60 (4501.56)	230512.74 (55100.37)	9777.08 (1226.40)	619.22 (8.70)	488.96 (10.06)
2000	127611.00 (36197.40)	782259.10 (113710.19)	171828.30 (50009.96)	14690.05 (348.69)	10224.15 (176.75)	816388.05 (76373.70)	64460.70 (6713.80)	103346.95 (18054.90)	1264136.15 (277446.61)	37112.70 (3284.76)	1283.30 (12.74)	987.30 (17.12)
3000	258941.80 (32847.33)	1651299.65 (165418.50)	379494.45 (150722.22)	30726.55 (672.35)	20525.75 (243.25)	2110190.35 (150554.70)	148965.65 (15416.54)	237150.05 (34479.28)	3089269.55 (897972.20)	82409.05 (9058.99)	2067.85 (11.53)	1556.35 (24.57)
4000	456691.50 (52770.02)	2898018.90 (336195.20)	947676.20 (590390.83)	53163.25 (4796.46)	34016.00 (340.35)	4305539.00 (212761.89)	249999.90 (20483.48)	410290.70 (52437.08)	8333276.70 (4118621.39)	137486.80 (11306.30)	2751.35 (23.38)	2084.60 (32.50)
5000	749652.90 (115074.26)	4455239.90 (428996.84)	1228238.05 (392144.80)	80340.20 (4274.14)	50725.50 (434.84)	7395962.85 (327107.22)	390333.35 (25786.39)	678640.75 (102597.10)	9627762.70 (1251347.15)	210968.45 (12322.07)	3516.50 (22.42)	2608.40 (35.54)
6000	1178512.95 (258908.47)	7098500.00 (920000.56)	1631506.05 (484262.62)	113980.55 (3529.46)	74472.95 (15830.11)	11235368.95 (618558.91)	573466.30 (38840.36)	1072480.40 (231101.52)	17987532.50 (6097699.97)	316051.15 (34074.50)	4283.95 (30.91)	3180.90 (165.42)
7000	1756595.55 (540226.17)	10108059.65 (1274409.79)	2381153.25 (556959.53)	153005.50 (4684.33)	95267.70 (3378.99)	16668022.80 (70447.53)	776146.80 (49606.31)	1564288.30 (482763.00)	27319304.10 (17688541.81)	425265.90 (22186.66)	5046.95 (30.16)	3695.15 (50.03)
8000	2343238.05 (60702.42)	13962481.25 (1324681.30)	2821014.65 (616481.79)	197534.85 (3546.26)	122327.65 (3706.57)	23374781.40 (1063801.30)	1058129.60 (50547.57)	2063113.30 (548783.29)	39095493.80 (11850090.50)	563264.05 (28875.70)	5837.20 (168.50)	4225.95 (84.87)
9000	315580.45 (872306.63)	17743922.90 (1786655.88)	3931154.10 (1294252.63)	248614.60 (4416.31)	152992.35 (3099.26)	31594460.65 (1251302.15)	1330724.55 (75642.01)	2695612.30 (801072.77)	56111693.00 (15586598.08)	701773.25 (45423.91)	6629.70 (73.38)	4974.55 (182.27)
10000	4306694.55 (1235294.34)	25044633.70 (4800127.69)	4517408.60 (1255294.54)	304100.90 (4644.34)	186291.00 (1304.28)	40465336.20 (1459252.55)	1649496.45 (93040.74)	3603124.55 (1078379.49)	65818452.90 (14163013.18)	869738.35 (37169.40)	7516.90 (176.67)	5498.30 (120.89)

Table 78: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 7 produced by the classical method.

n	OP1+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	147.34 (15.44)	161.70 (16.88)	139.22 (25.39)	38.70 (5.77)	36.16 (4.82)	34.84 (13.51)	29.90 (7.30)	31.06 (5.13)	81.44 (12.01)	24.20 (3.23)	11.04 (0.92)	12.04 (1.36)
40	344.00 (53.10)	445.00 (54.77)	311.80 (51.33)	86.16 (6.29)	81.36 (6.06)	136.62 (46.37)	78.58 (21.22)	80.86 (15.82)	262.86 (63.03)	56.06 (8.95)	21.34 (1.08)	23.16 (1.87)
60	584.08 (101.09)	836.94 (96.96)	511.24 (108.05)	135.48 (9.06)	125.64 (7.79)	338.34 (123.73)	136.02 (26.96)	155.52 (36.19)	751.88 (1273.15)	100.88 (15.09)	33.36 (3.05)	34.78 (4.33)
80	921.86 (206.34)	1332.58 (204.13)	694.64 (155.51)	186.78 (11.78)	172.02 (9.68)	533.94 (152.34)	217.28 (46.85)	221.44 (44.12)	1023.86 (295.49)	153.38 (26.57)	44.62 (2.15)	45.42 (3.11)
100	1220.60 (210.18)	1839.16 (246.64)	1177.40 (692.30)	241.38 (15.07)	221.02 (11.61)	863.78 (220.41)	309.62 (73.71)	330.66 (66.94)	1563.94 (314.72)	211.62 (35.83)	57.54 (3.44)	55.30 (3.45)
200	3001.64 (558.63)	5806.02 (985.12)	2623.52 (657.71)	536.08 (17.12)	471.74 (14.59)	3944.30 (919.42)	932.68 (211.27)	1089.66 (251.02)	8928.14 (15773.81)	580.46 (93.75)	118.66 (3.77)	108.52 (5.82)
300	5209.82 (803.76)	12165.02 (1501.01)	4501.50 (1230.51)	888.76 (26.63)	761.06 (24.09)	9220.50 (1374.96)	2099.66 (398.89)	2432.36 (434.44)	16559.58 (4947.63)	1204.54 (181.82)	181.02 (9.44)	162.60 (7.91)
400	7868.40 (1295.47)	20895.82 (3450.49)	6764.48 (2089.04)	1305.82 (39.45)	1099.58 (63.53)	17995.02 (2818.29)	3578.22 (641.27)	4411.90 (905.74)	32000.84 (6772.45)	1906.26 (267.74)	246.74 (7.48)	229.58 (91.82)
500	12113.54 (9349.24)	35293.44 (8535.89)	10180.90 (3082.79)	1778.16 (47.47)	1453.02 (28.90)	29289.02 (4065.49)	5044.54 (886.62)	6543.04 (1028.57)	56262.66 (12990.45)	2886.54 (452.15)	308.38 (5.88)	269.72 (7.44)
600	13872.62 (1833.00)	49431.82 (9614.23)	13273.96 (3975.70)	2307.20 (86.19)	1846.76 (35.29)	46338.12 (6752.96)	7574.60 (1204.33)	10298.06 (8002.29)	73140.40 (12990.45)	4059.66 (723.96)	375.50 (6.21)	323.62 (11.86)
700	18234.24 (2497.61)	71008.04 (11161.52)	17898.12 (5070.59)	2900.50 (87.85)	2281.92 (37.51)	65262.40 (9028.76)	11289.44 (8583.23)	12242.54 (1938.74)	108986.26 (29456.07)	5411.12 (873.31)	444.56 (8.11)	377.60 (8.74)
800	23827.86 (5762.41)	95865.86 (23114.45)	21456.46 (6124.26)	3578.40 (78.41)	2750.14 (42.80)	89688.32 (10415.68)	12330.72 (2071.59)	16834.76 (6848.65)	142573.16 (29880.27)	6786.58 (826.58)	510.56 (11.48)	431.84 (16.47)
900	29397.02 (5218.52)	120887.68 (22076.05)	27757.16 (7657.18)	4338.54 (143.02)	3257.80 (50.68)	116428.96 (12930.24)	15576.66 (2460.06)	21343.32 (3521.45)	183736.26 (44959.80)	8423.16 (1134.30)	577.14 (10.90)	490.76 (14.42)

Table 79: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 7 produced by the classical method (continued).

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
1000	34759.22 (6514.64)	152900.08 (25274.66)	33015.56 (7602.14)	5155.26 (142.32)	4430.84 (4464.59)	153315.74 (17532.31)	20054.80 (2999.40)	26072.62 (4518.19)	247263.40 (58755.77)	10367.94 (1563.73)	641.44 (7.59)	545.58 (14.23)
2000	130962.85 (25151.99)	687427.35 (125381.79)	106654.70 (24082.80)	17055.05 (294.01)	11693.30 (98.45)	754158.50 (50823.16)	75198.25 (10932.87)	113179.15 (27509.08)	1470801.90 (460048.02)	37941.70 (2484.17)	1324.55 (11.61)	1097.70 (20.79)
3000	282494.80 (45904.13)	1617353.20 (147265.82)	280242.70 (101344.58)	35790.15 (572.74)	23395.50 (214.82)	1984345.75 (167167.08)	176458.30 (11183.57)	248946.70 (44529.78)	3300603.05 (932445.22)	84994.20 (5841.60)	2130.25 (20.05)	1728.50 (41.09)
4000	554341.55 (131876.90)	2927800.75 (368324.85)	506474.90 (169486.33)	60750.75 (845.82)	38817.80 (408.02)	3979719.55 (319989.46)	317713.45 (36618.57)	494466.70 (126724.34)	7426383.75 (2564230.18)	154585.20 (16074.38)	2858.35 (23.00)	2300.05 (43.28)
5000	838815.70 (131603.57)	4667701.85 (506771.73)	857970.50 (359067.75)	94400.90 (5832.08)	58006.50 (455.69)	6769245.10 (267987.64)	481640.35 (26360.61)	745239.05 (124773.88)	14026518.20 (779604.31)	238507.65 (16230.82)	3633.15 (31.80)	2875.80 (56.28)
6000	1313402.25 (186813.87)	7232769.30 (747122.52)	1173040.65 (321230.22)	131087.85 (1425.51)	84381.70 (15653.54)	10764315.35 (565378.54)	700777.45 (38708.63)	1147954.70 (171262.93)	19355674.20 (5740463.24)	343440.80 (19021.65)	4419.10 (30.80)	3454.05 (57.59)
7000	1849543.60 (375777.19)	9523223.55 (1105533.86)	1723316.95 (590829.87)	178007.85 (2597.78)	107908.65 (688.86)	15783037.50 (590299.62)	940502.30 (52435.36)	1589295.00 (345341.94)	33341458.30 (15491894.95)	466147.55 (24988.83)	5186.40 (36.35)	4048.75 (46.88)
8000	2748587.15 (423539.90)	13439683.90 (2623074.63)	2436986.70 (749647.45)	230552.00 (5134.98)	138465.15 (748.40)	22187207.50 (695220.45)	1254301.55 (102042.82)	2253630.35 (388477.11)	46087002.15 (38312737.69)	626158.80 (29777.95)	5970.15 (43.28)	4663.05 (60.53)
9000	3742040.75 (779777.58)	17737680.55 (2100781.00)	3707258.00 (1597422.93)	288518.55 (4324.35)	173989.20 (4644.06)	28860126.30 (1254538.27)	1588162.35 (107159.88)	2950105.65 (670381.78)	53347207.15 (15384968.32)	799703.85 (38555.07)	6848.40 (60.63)	5475.25 (145.81)
10000	4698355.50 (912195.11)	23095904.45 (2323957.82)	4349915.30 (1837091.88)	353841.35 (5535.91)	211683.75 (3650.78)	37737726.95 (1289864.04)	1972689.75 (99799.71)	3620602.90 (831044.54)	72332858.15 (26081264.75)	959487.65 (36909.96)	7990.05 (277.80)	6056.60 (214.70)

Table 80: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 8 produced by the classical method.

n	OP1+EPPS	PT+EPPS	VSR+EPPS	VSR	VR	VA	PT	OP1	OP2	T	IS	HL
20	148.88 (20.88)	143.10 (19.46)	181.84 (26.78)	45.52 (5.13)	43.40 (6.64)	36.64 (17.39)	30.72 (11.02)	31.20 (5.57)	81.42 (14.28)	23.86 (2.99)	11.34 (0.75)	13.48 (1.45)
40	350.20 (51.05)	381.58 (47.04)	390.74 (47.53)	99.54 (11.03)	92.42 (7.09)	129.18 (49.80)	76.78 (20.27)	80.20 (16.58)	403.00 (844.52)	56.94 (8.76)	22.18 (2.88)	25.26 (2.32)
60	615.06 (108.93)	735.16 (113.32)	678.12 (133.94)	153.42 (8.63)	143.38 (8.17)	299.74 (98.29)	148.42 (39.16)	148.66 (28.43)	721.02 (865.43)	102.82 (15.41)	33.74 (1.85)	37.68 (3.50)
80	884.80 (134.19)	1109.46 (126.35)	908.92 (153.31)	209.72 (12.28)	194.86 (13.36)	551.88 (146.48)	225.06 (56.72)	223.48 (51.64)	2531.88 (10678.16)	148.58 (26.61)	45.14 (2.24)	48.52 (3.37)
100	1176.42 (173.31)	1593.22 (234.59)	1281.82 (222.46)	270.54 (16.25)	247.86 (12.66)	824.06 (223.84)	315.32 (80.05)	349.08 (68.28)	1690.86 (497.01)	212.22 (46.09)	57.48 (2.11)	60.56 (3.52)
200	2956.60 (375.97)	5004.64 (632.42)	3053.40 (600.00)	609.36 (23.57)	540.86 (19.32)	3832.50 (841.57)	1027.90 (257.01)	2868.20 (12166.36)	7189.20 (2128.95)	615.24 (117.38)	133.26 (59.03)	118.68 (5.26)
300	5069.14 (763.95)	9963.60 (1271.16)	5198.50 (1303.61)	1002.30 (31.22)	860.04 (26.01)	9134.34 (1805.07)	2318.54 (360.84)	2593.56 (462.93)	17358.54 (5366.41)	1205.70 (185.46)	185.16 (4.34)	174.98 (5.73)
400	7723.26 (1065.50)	16665.56 (2092.37)	7595.54 (1616.23)	1493.86 (97.68)	1238.82 (62.23)	17354.84 (2820.73)	3592.86 (688.15)	4268.52 (884.20)	31398.24 (6967.62)	1898.58 (306.02)	253.50 (5.09)	235.58 (7.85)
500	11092.88 (1564.96)	26549.44 (3048.09)	12370.46 (7184.03)	4027.26 (14192.51)	1631.10 (30.67)	29969.26 (5385.69)	5716.20 (858.33)	6921.94 (1212.55)	51496.54 (14960.58)	2981.02 (421.69)	324.16 (48.15)	293.30 (8.98)
600	14124.80 (1605.09)	36210.52 (4814.76)	17540.36 (5957.00)	2620.14 (110.07)	2085.66 (40.96)	44375.58 (7243.26)	8158.96 (1315.72)	9303.46 (1372.51)	79390.28 (22106.24)	4021.22 (513.12)	390.28 (10.53)	357.94 (14.74)
700	18755.46 (2905.46)	49591.54 (6075.75)	21948.10 (5957.00)	3303.66 (110.07)	2569.18 (43.29)	61171.02 (8405.94)	10799.14 (1766.32)	15250.70 (2789.01)	121006.24 (38274.16)	5342.44 (722.20)	469.40 (64.63)	412.84 (7.85)
800	23666.04 (6540.13)	65766.58 (8904.81)	26747.54 (7851.30)	4034.60 (123.32)	3092.68 (76.17)	82684.50 (11461.71)	13228.20 (1987.82)	15875.18 (2532.28)	148341.70 (42707.70)	6466.94 (1040.80)	533.98 (53.34)	471.26 (15.75)
900	28600.54 (3635.90)	84171.08 (17437.68)	32236.74 (8461.73)	4869.72 (156.74)	3664.90 (77.40)	113929.72 (18898.41)	17725.48 (2298.01)	21316.18 (3315.97)	204499.92 (50248.12)	8317.80 (1233.45)	619.42 (106.00)	533.86 (20.54)

Table 81: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 8 produced by the classical method(continued).

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
1000	34611.66 (4260.80)	107287.58 (19241.24)	43378.18 (13676.42)	5790.86 (154.01)	4247.50 (56.05)	138854.56 (16020.87)	21573.70 (2605.84)	25907.26 (4090.78)	263766.94 (66519.42)	10294.54 (1446.86)	674.50 (68.49)	593.44 (17.88)
2000	137996.75 (32613.11)	404580.90 (63522.68)	169037.00 (62878.32)	21139.70 (8893.31)	13061.80 (155.79)	696712.85 (58104.57)	87081.15 (12123.07)	110239.35 (15656.98)	1251667.85 (299543.18)	40654.40 (4439.21)	1388.45 (84.34)	1204.40 (29.30)
3000	300023.70 (88427.24)	1041417.35 (156830.87)	309600.35 (80460.60)	41210.65 (5625.17)	27347.50 (5631.72)	1814546.55 (96535.36)	190906.70 (18708.86)	259816.70 (71186.60)	3941319.20 (990717.70)	85114.70 (4350.46)	2269.95 (124.36)	1875.20 (21.37)
4000	543342.00 (85425.03)	2078355.00 (224388.78)	546468.95 (131394.74)	68571.25 (915.40)	43066.90 (402.82)	3668064.35 (310278.14)	334944.90 (31579.76)	471821.90 (74160.35)	7205152.65 (2084784.26)	150841.55 (9872.14)	3034.65 (142.08)	2517.30 (37.54)
5000	990608.80 (193986.31)	3662613.20 (450229.42)	966897.40 (274797.40)	103851.35 (1584.00)	67998.60 (16614.47)	6279770.60 (370678.01)	526805.25 (37402.41)	848288.80 (181687.64)	13549507.75 (6233765.34)	235862.00 (44495.06)	3896.10 (150.67)	3191.70 (38.86)
6000	1441532.90 (305480.04)	5758918.80 (705337.97)	1417179.60 (409707.87)	147111.40 (1994.42)	89878.80 (807.01)	9841584.15 (573049.38)	767008.10 (47626.65)	1172984.35 (288773.95)	20073135.85 (6125190.97)	344350.95 (26035.35)	4752.50 (162.55)	3809.25 (56.61)
7000	1991528.90 (217123.51)	892749.10 (860674.88)	1987622.05 (500971.37)	199864.10 (4259.19)	119642.00 (656.52)	13920160.00 (675063.33)	1056510.55 (78060.53)	1516850.55 (200000.89)	25658049.15 (5915907.38)	463205.05 (27556.96)	5543.95 (173.43)	4490.20 (152.54)
8000	3032693.40 (520688.55)	11629102.60 (1311521.42)	2247915.40 (731875.42)	257365.65 (5649.24)	153109.95 (1012.43)	1989538.20 (1071734.34)	1359694.60 (94473.43)	2197928.50 (485215.58)	47405643.70 (30752286.50)	605465.35 (37263.41)	6440.90 (158.99)	6592.15 (5789.60)
9000	4238425.30 (765203.81)	15629155.45 (2156959.25)	3049030.25 (862195.14)	329958.05 (24104.58)	201464.30 (23462.74)	25926112.00 (1263620.31)	1757538.65 (92119.23)	2876621.75 (663602.70)	54941438.65 (23473648.61)	766771.85 (45975.00)	7337.90 (146.34)	5953.35 (79.71)
10000	5518183.45 (781222.80)	20126925.35 (2362505.98)	4018969.25 (1504089.14)	397527.80 (5818.86)	234626.30 (1402.21)	33959333.80 (1526850.67)	2155659.20 (146413.51)	3552544.35 (691804.78)	70881005.95 (18346866.50)	973243.05 (60914.80)	8322.55 (165.81)	6613.60 (71.65)

Table 82: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 9 produced by the classical method.

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
20	150.90 (15.17)	164.00 (19.10)	199.18 (27.51)	50.68 (5.50)	48.16 (7.87)	33.94 (14.84)	31.64 (9.01)	30.90 (5.02)	94.00 (22.82)	23.78 (3.35)	11.64 (1.12)	14.22 (1.85)
40	341.72 (46.56)	410.98 (51.96)	433.98 (69.51)	112.86 (7.59)	106.50 (7.27)	132.44 (40.90)	86.40 (22.60)	82.92 (15.04)	297.98 (68.42)	55.94 (7.33)	22.32 (1.24)	27.72 (1.99)
60	622.26 (106.51)	783.04 (114.36)	749.20 (115.28)	175.34 (9.78)	164.14 (9.58)	265.30 (92.20)	148.18 (36.68)	151.78 (34.83)	623.82 (121.62)	96.60 (13.76)	34.82 (1.73)	41.14 (3.85)
80	879.76 (135.86)	1209.80 (160.52)	964.44 (157.89)	236.64 (12.09)	219.78 (13.10)	516.66 (139.67)	240.94 (60.52)	236.76 (48.14)	1161.06 (326.14)	144.32 (20.43)	46.90 (2.30)	53.28 (3.86)
100	1224.22 (206.45)	1762.22 (224.63)	1286.90 (275.94)	303.74 (16.84)	280.48 (14.46)	812.60 (246.94)	333.22 (92.69)	346.14 (70.47)	1659.50 (386.48)	211.54 (32.80)	60.50 (6.66)	65.24 (4.31)
200	2860.66 (427.97)	5345.52 (643.84)	3175.42 (666.91)	678.08 (21.95)	597.64 (20.28)	3339.44 (833.44)	1361.66 (83.94)	1169.80 (215.39)	6976.06 (1406.39)	610.20 (91.55)	124.48 (6.37)	136.98 (62.99)
300	5287.42 (725.88)	13533.64 (21412.83)	4884.48 (1180.77)	1130.16 (31.77)	977.72 (52.87)	1021.408 (11851.99)	2319.34 (518.55)	2408.76 (447.18)	16374.02 (3738.95)	1153.08 (207.55)	190.94 (6.44)	192.74 (6.92)
400	8297.08 (1198.35)	17929.48 (2460.21)	8448.10 (1988.90)	1645.38 (37.46)	1377.92 (34.17)	15974.02 (3134.78)	3018.10 (818.12)	4306.72 (858.91)	34923.84 (9329.97)	1947.32 (337.76)	263.50 (38.02)	257.24 (8.04)
500	11294.86 (1501.22)	28968.72 (4544.16)	12972.50 (3761.11)	2248.04 (59.84)	1839.70 (76.12)	25587.52 (5083.07)	5963.40 (1279.03)	6418.26 (1157.92)	54360.88 (11476.31)	2803.36 (474.72)	336.06 (50.27)	321.30 (10.34)
600	15212.38 (2005.50)	40494.62 (5376.28)	16993.56 (4002.48)	5166.88 (15832.64)	2336.54 (62.78)	40191.26 (5474.91)	8179.28 (148.73)	10615.26 (8056.33)	78485.54 (15744.96)	3938.98 (577.18)	402.26 (37.77)	386.86 (18.60)
700	19539.22 (2488.91)	59040.66 (9682.05)	21641.16 (4940.49)	3674.86 (92.80)	2876.88 (73.67)	56012.12 (8561.79)	11217.78 (1887.33)	13045.60 (2022.74)	116643.38 (37928.87)	5288.96 (712.68)	480.12 (52.80)	453.04 (15.18)
800	24154.06 (2514.33)	74804.88 (10809.43)	30002.30 (8266.97)	4467.28 (95.16)	3433.96 (66.30)	76797.66 (9521.32)	14231.50 (2917.10)	16140.56 (2372.01)	156951.22 (39396.56)	6800.60 (1229.57)	553.98 (63.24)	512.74 (15.73)
900	29785.16 (5304.58)	99565.44 (19768.48)	34756.78 (8503.87)	5360.18 (123.02)	4048.88 (65.80)	103198.50 (13585.98)	19386.52 (7310.99)	21190.44 (2814.63)	195898.06 (38294.88)	8184.56 (1025.33)	622.90 (92.26)	585.46 (31.76)

Table 83: Average Elapsed Time (microseconds) to Produce an Induced Planar Subgraph on graphs of size n and expected average degree 9 produced by the classical method(continued).

n	OPI+EPS	PT+EPS	VSR+EPS	VSR	VR	VA	PT	OPI	OP2	T	IS	HL
1000	35331.54 (4317.31)	123352.54 (22046.55)	44548.08 (21176.20)	6425.04 (114.92)	5362.92 (4410.82)	127326.28 (17927.41)	2771.96 (3539.82)	26076.44 (4210.63)	261240.84 (67780.33)	10268.78 (1583.86)	692.50 (60.44)	645.46 (17.41)
2000	140267.90 (24620.21)	569798.30 (64588.55)	182850.30 (75168.27)	25427.45 (18912.56)	14368.70 (123.54)	647218.05 (58184.35)	94484.85 (21162.21)	110932.10 (12229.75)	1348535.05 (408869.09)	41113.50 (10317.05)	1421.75 (83.55)	1304.40 (27.40)
3000	279975.35 (76007.71)	1382785.60 (222622.06)	346720.65 (92794.12)	43916.65 (828.14)	28470.60 (225.86)	1684150.40 (102894.26)	200096.40 (21250.09)	235716.70 (72112.29)	3385482.30 (1191319.79)	86784.00 (6904.70)	2333.10 (131.14)	2056.60 (44.49)
4000	542369.75 (103494.48)	2316007.00 (319759.93)	656125.95 (242818.77)	74912.05 (1150.21)	47922.90 (3288.47)	3370416.75 (239338.99)	357103.60 (34302.91)	463442.10 (97054.00)	6183185.55 (1378996.86)	151446.45 (14669.84)	3130.40 (148.07)	2748.90 (44.93)
5000	886716.25 (173162.85)	3641244.45 (536561.32)	1085183.00 (439934.49)	114970.95 (4694.25)	70549.75 (436.98)	5763889.00 (244851.48)	576825.25 (44509.37)	723422.05 (155874.04)	11012488.25 (3546702.62)	235711.80 (14603.50)	4001.05 (127.83)	3460.95 (31.61)
6000	1379645.25 (298835.45)	5561918.55 (717148.65)	1522657.90 (382521.61)	162385.95 (4014.88)	98127.80 (499.90)	8994619.05 (427346.05)	815174.90 (62940.95)	1078222.15 (265268.13)	21280845.35 (12088587.65)	347982.50 (27230.14)	4823.45 (147.73)	4125.80 (55.42)
7000	2007464.15 (276153.64)	7471425.65 (721303.53)	2168889.30 (624522.58)	218167.10 (3520.43)	131952.90 (958.68)	12995227.90 (820474.37)	1118027.70 (67679.78)	1459664.90 (249099.86)	22056874.05 (4212884.82)	469998.60 (26828.09)	5712.65 (169.53)	4832.05 (96.12)
8000	3048853.45 (521214.53)	10977735.85 (902618.84)	3206083.15 (821912.05)	283326.10 (5988.63)	168613.50 (3539.84)	17875478.70 (980372.35)	1516017.70 (80300.50)	2100532.10 (459472.38)	34860650.95 (6927702.45)	618246.90 (41379.98)	6643.85 (233.24)	5601.20 (98.06)
9000	4289926.50 (598410.27)	14433296.20 (1878306.70)	3444500.05 (876055.04)	355215.30 (2338.71)	210936.50 (3838.27)	24151738.90 (952619.48)	1875012.10 (169078.12)	2836249.60 (556603.59)	53954012.95 (22217641.95)	785701.45 (40011.83)	7580.10 (168.65)	6527.70 (97.09)
10000	5370237.40 (616488.55)	18338269.30 (1577025.41)	4757367.50 (1260970.67)	436664.55 (11477.28)	256443.00 (5189.90)	32189061.05 (1314588.55)	2307826.20 (161053.53)	3298093.05 (551164.06)	59517301.50 (13991004.85)	978810.20 (49891.97)	8643.70 (215.84)	7221.85 (116.44)

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