

Scan

(including cover sheet)

Harary, Palmer, Read

add to all sequences
listed on cover sheet

7 pages

Cover sheet

Hasary, Palmer and Read
On the cell-growth problem for arbitrary
polygons, computer print-out,
circa 1974

A108, A3441, A1683, A3446,
A207, A1764, A2293 - A2296,
A5033 - A5040.

The following tables for the more important of the counting series discussed in the text were computed using APL on the IBM 360/75 computer at the University of Waterloo.

Catalan **A344** *new?*
 ✓ N577 A108 N1141? N1325 again N631.? *new?*
 Harary → Palmer & Read Table 1. n = 3. *have*
 N942

r	U _r ⁽³⁾	F _r ⁽³⁾	H _r ⁽³⁾	f _r ⁽³⁾	h _r ⁽³⁾
0	1	0	0	0	0
1	1	1	1	1	1
2	2	1	1	1	1
3	5	3	1	2	1
4	14	10	4	6	3
5	42	30	6	16	4
6	132	99	19	52	12
7	429	335	49	170	27
8	1430	1144	150	579	82
9	4862	3978	442	1996	228
10	16796	14000	1424	7021	735
11	58786	49742	4522	24892	2282
12	208012	178296	14924	89214	7528
13	742900	643856	49536	321994	24834
14	2674440	2340135	167367	1170282	83898
15	9694845	8554275	570285	4277352	285357
16	35357670	31429068	1965058	15715249	983244
17	129644790	115997970	6823410	57999700	3412420
18	477638700	429874830	23884366	214939846	11944614
19	1767263190	1598952498	84155478	799478680	42080170
20	6564120420	5967382200	298377508	2983699498	149297152
21	24466267020	22333765540	1063750740	11169391168	551883768
22	91482563640	83850016956	3811803164	41929537871	1905936975
23	343059613650	315614844558	13722384546	157807451672	6861221666
24	1289904147324	1190680751376	49611801980	595340479694	24806004996
25	4861946401452	4501802224520	180072089896	2250901216266	90036148954
26	18367353072152	17055399281284	655977206384	8527700012092	327939004892
27	69523550016004	64738133611452	2397708652276	32369067177176	1192254097538
28	263747951750560	246164754970244	8701599732140	123082378822342	4395201203290
29	1002242216651368	937581428489312	32330394085528	468790715577376	16105198379984
30	3814986502092304	3576549845711535	119218333037807	1788274927703190	59609171366326

A344

Ent'd from
Read's other
page
but
check
later!

A1683

A3446

A207

MANY

— not all entered!



~~N1174~~

~~3582~~
N1611.5
new

Table 2. n = 4.

N699.7 new

~~3583~~

N1411.3

~~3585~~
1086.5

r	$U_r^{(4)}$	$F_r^{(4)}$	$h_r^{(4)}$
0		0	0
1	✓	1	1
2		1	1
3		5	2
4		22	5
5	273	116	13
6	2428	612	64
7	7752	3399	315
8	A1764	19228	1727
9		111041	9658
10		650325	55657
11		3856892	325390
12		23107896	1929160
13		139672312	11555172
14		850624376	69840032
15		5214734547	425318971
16		32154708216	2607388905
17		199292232055	16077392564
18		1240877862315	99646239355
19		7758138260565	620439153165
20		48585766617950	3879969845640
21		306558216362064	24342884609625
22		1936246229757840	153279112388352

A5033

A5034

A5035

A5036

~~Other ref to this page~~

Please enter 4

new values

N1454

N1769.5
= ~~3506~~

new?
Table 3. n = 5.
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N799.7
= ~~3508~~

N1454.7

= ~~3508~~

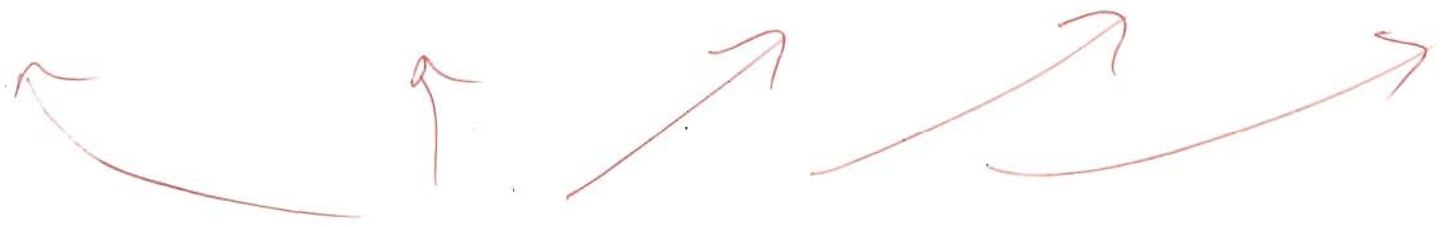
N131.9

= ~~3509~~

r	$U_r^{(5)}$	$F_r^{(5)}$	$H_r^{(5)}$	$f_r^{(5)}$	$h_r^{(5)}$
0	A2293	A5037	A5038	A5039	A5040
1	1	0	0	0	
2	4	1	1	1	
3	22	6	2	4	
4	140	40	12	22	
5	969	285	57	147	
6	7084	2126	366	1074	
7	53820	16380	2340	8216	
8	420752	129456	16252	64798	
9	3362260	1043460	115940	521900	
10	27343888	8544965	854981	4272967	
11	225568798	70893054	6444826	35447724	
12	1882933364	594610536	49554420	297303810	
13	15875338990	5033644070	387203390	2516830890	
14	134993766600	42952562100	3068067060	21476307960	
15	1156393243320	369061673460	24604111560	184530904560	
16	9969937491420	3190379997272	199398960212	1595190209002	
17	86445222719724	27727712947836	1631041938108	13863857007924	
18	753310723010608	242135589539124	13451978877748	121067796450692	
19	6594154339031800	2123541227823800	111765327780200	1061770618201680	

Number here is "N1454"

number is "3506"



Please enter 5

N1646
new values

~~3514~~

Table 4. n = 6.

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~~3515~~

~~3516~~

~~3517~~

r	$U_r^{(6)}$	$F_r^{(6)}$	$H_r^{(6)}$	$f_r^{(6)}$	$h_r^{(6)}$
0	A2294	0	0	0	0
1	1	1	1	1	1
2	5	1	1	1	1
3	35	8	3	6	3
4	285	64	19	35	12
5	2530	578	118	302	68
6	23751	5421	931	2765	483
7	231280	54132	7756	27168	3946
8	2330445	548340	68685	274360	34485
9	23950355	5572645	630465	2837208	315810
10	250543370	56653210	5966610	29828330	2984570
11	2658968130	635841960	57805410	317929170	28907970
12	28558343775	6854002506	571178751	3427017696	285601251
13	309831575760	74589100058	5737638778	37294629141	2868869733
14	3390416787880	818376466040	58455577800	409188395336	29227904840
15	37377257159280	9042884962656	602859152496	4521443270094	301430074416
16	414741863546285	100543482073820	6283968796705	50271742681930	3141985563575
17	4628362722856425	1124030948665563	66119469155523	562015482388810	33059739636198

N1780
new values

Table 5. n = 7.

~~3510~~

~~3511~~

~~3512~~

~~3513~~

r	$U_r^{(7)}$	$F_r^{(7)}$	$H_r^{(7)}$	$f_r^{(7)}$	$h_r^{(7)}$
0	A2295	1	0	0	0
1	1	1	1	1	1
2	6	1	1	1	1
3	51	9	3	6	3
4	506	92	26	49	16
5	5481	1015	203	518	112
6	62832	11781	1989	5916	1020
7	749398	141778	20254	70984	10222
8	9203634	1753074	219388	876790	109947
9	115607310	22137570	2459730	11069760	1230840
10	1478314266	284291205	28431861	142148343	14218671
11	19180049928	3701413144	336492104	1850717360	158256840
12	251857119696	48746539296	4062243024	24373301064	2031152923
13	3340843549855	648223375345	49863336565	324111813153	24931793768
14	44700485049720	8691760931890	620840444834	4345380865644	310420597116
15	602574657427116	117384673524768	7825644901656	58692338275038	3912823963482
16	8175951659117794	1595307640803472	99706732152034	797653825003553	49853370677834

Please enter 5

N 1878

~~3518~~

Table 6. n = 8.

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~~3519~~

~~3520~~

~~3521~~

r	$U_r^{(8)}$	$F_r^{(8)}$	$H_r^{(8)}$	$f_r^{(8)}$	$h_r^{(8)}$
0	A2296	1	0	0	0
1		1	1	1	1
2		7	1	1	1
3		70	11	4	4
4		819	126	35	21
5		10472	1641	332	183
6		141778	22386	3766	1918
7		1997688	317260	45448	22993
8		28989675	4638348	580203	290511
9		430321633	69159400	7684881	3844638
10		6503352856	1048927880	104898024	52454248
11		99726673130	16132263329	1466576104	733317576
12		1547847846090	251002353420	20916933674	10458537726
13		24269405074740	3943778426497	303367665286	151684239896
14		383846168712104	62426585604296	4463328542008	2231665269848
15		6116574500860880	997267583116280	66484506898320	33242259265880

Please enter all 5