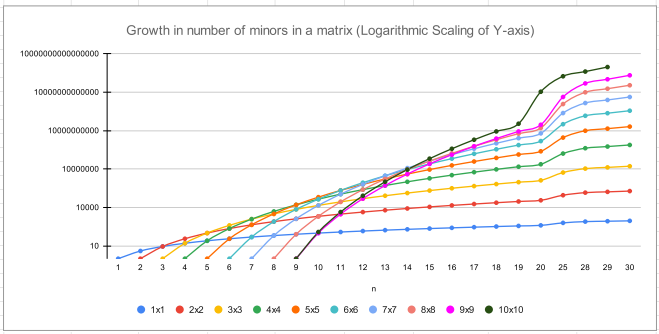
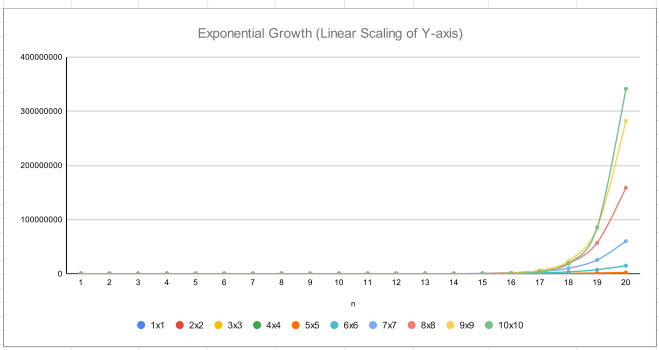
n	1x1	2x2	3x3	4x4	5x5	6x6	7x7	8x8	9x9	10x10
1	1	0	0	0	0	0	0	0	0	0
2	4	1	0	0	0	0	0	0	0	0
3	9	9	1	0	0	0	0	0	0	0
4	16	36	16	1	0	0	0	0	0	0
5	25	100	100	25	1	0	0	0	0	0
6	36	225	400	225	36	1	0	0	0	0
7	49	441	1225	1225	441	49	1	0	0	0
8	64	784	3136	4900	3136	784	64	1	0	0
9	81	1296	7056	15876	15876	7056	1296	81	1	0
10	100	2025	14400	44100	63504	44100	14400	2025	100	1
11	121	3025	27225	108900	213444	213444	108900	27225	3025	121
12	144	4356	48400	245025	627264	853776	627264	245025	48400	4356
13	169	6084	81796	511225	1656369	2944656	2944656	1656369	511225	81796
14	196	8281	132496	1002001	4008004	9018009	11778624	9018009	4008004	1002001
15	225	11025	207025	1863225	9018009	25050025	41409225	41409225	25050025	9018009
16	256	14400	313600	3312400	19079424	64128064	130873600	165636900	130873600	64128064
17	289	18496	462400	5664400	38291344	153165376	378224704	590976100	590976100	378224704
18	324	23409	665856	9363600	73410624	344622096	1012766976	1914762564	2363904400	1914762564
19	361	29241	938961	15023376	135210384	736145424	2538950544	5712638724	8533694884	8533694884
20	400	36100	1299600	23474025	240374016	1502337600	6009350400	15868440900	28210561600	34134779536
25	625	90000	5290000	160022500	2822796900	31364410000	231072490000	1169804480625	4173746850625	10684791937600
28	784	142884	10732176	419225625	9658958400	141933027600	1401950721600	9660316691025	47705267610000	172216016072100
29	841	164836	13351716	564110001	14102750025	225644000400	2436034208400	18422508701025	100300325150025	401201300600100
30	900	189225	16483600	751034025	20307960036	352568750625	4144481640000	34256731055625	204694541122500	902702926350225





Key Insights

As 'n' goes on increasing, the 'mxm' sub-matrices (where m goes from 1 to 10), show the following behaviour :

1) The count of sub-matrices are the squares of the coefficients of the Bernoulli Expansion.
2) The numbers show symmetry similar to that of a Bernoulli Expansion. For example, for n=5, sequence is : 5^2 , 10^2, 10^2, 5^2, 1^2
3) The sub-matrix count increases exponentially.