

Table154_Square-perimeters-7

How many MPS (z²) does it take to fill a SQUARE with 4z=P perimeters? & 4A & 64A

p	Mersenne Primes = 2 ^{p-1} = (2 ⁿ⁺¹) - 1 = z	2 ^{p-1} = 2 ⁿ = x	x-1 = y	Σ·x/2 =PN =xz	Mersenne Prime Square (MPS) =z ²	PN/4=s =xz/4	Square Area, s ² =N ² z ² =(PN/4) ² =A _{MPS}	PN ² =16A	16A/PN	16A/MPS	4A	4A/PN	4A/MPS	64A	64A/PN	64A/MPS	PN ² /MPS=(xz) ² /z ² =16N ²	PN·z=PN ² /x =16A/x	4PN+2x =PN _{next}
2	2 ²⁻¹ =4-1=3	2 ¹ =2	2-1=1	6·1=6	3 ² =9	6÷4=1.5	0.25·3 ² =9	16·9=144	144/6=24	144/9=16	4·9=36	36/6=6	36/9=4	64·9=576	576/6=96	576/9=64	144/9=16	6·3=18	4(6)+2(2)=28
3	7	4	3	28	49	7	49	784	28	16	196	7	4	3136	112	3185	16	196	120
4	15	8	7	120	225	30	900	14400	120	64	3600	30	16	57600	480	57825	64	1800	496
5	31	16	15	496	961	124	15376	246016	496	256	61504	124	64	984064	1984	985025	256	15376	2016
6	63	32	31	2016	3969	504	254016	4064256	2016	1024	1016064	504	256	16257024	8064	16260993	1024	127008	8128
7	127	64	63	8128	16129	2032	4129024	66064384	8128	4096	16516096	2032	1024	264257536	32512	264273665	4096	1032256	32640
8	255	128	127	32640	65025	8160	66585600	1065369600	32640	16384	266342400	8160	4096	4261478400	130560	4261543425	16384	8323200	130816
9	511	256	255	130816	261121	32704	1069551616	17112825856	130816	65536	4278206464	32704	16384	68451303424	523264	68451564545	65536	66846976	523776
10	1023	512	511	523776	1046529	130944	17146331136	274341298176	523776	262144	68585324544	130944	65536	1097365192704	2095104	1097366239233	262144	535822848	2096128
11	2047	1024	1023	2096128	4190209	524032	274609537024	439375259238	2096128	1048576	1098438148096	524032	262144	17575010369536	8384512	17575014559745	1048576	4290774016	8386560
12	4095	2048	2047	8386560	16769025	2096640	4395899289600	7033438863360	8386560	4194304	17583597158400	2096640	1048576	281337554534400	33546240	281337571303425	4194304	34342963200	33550336
13	8191	4096	4095	33550336	67092481	8387584	70351565357056	1125625045712896	33550336	16777216	281406261428224	8387584	4194304	4502500182851580	134201344	4502500249944060	16777216	274810802176	134209536
14	16383	8192	8191	134209536	268402689	33552384	1125762472083460	18012199553335296	134209536	67108864	4503049888333840	33552384	16777216	72048798213341400	536838144	72048798481744104	67108864	219875482828	536854528
15	32767	16384	16383	536854528	1073676289	134213632	18013299014631400	288212784234102784	536854528	268435456	72053196058525600	134213632	67108864	115285113693641000	2147418112	1152851138010090000	268435456	175911123189	2147450880
16	65535	32768	32767	2147450880	4294836225	536862720	288221580125798000	4611545282012774400	2147450880	1073741824	1152886320503190000	536862720	268435456	184461811280511000	8589803520	18446181132345900000	1073741824	14073319342080	8589869056
17	131071	65536	65535	8589869056	17179607041	2147467264	4611615649951650000	73785850399226331136	8589869056	4294967296	18446462599806600000	2147467264	1073741824	295143401596906000000	34359476224	29514340161408600000	4294967296	1125882727038976	34359607296
18	262143	131072	131071	34359607296	68718952449	8589901824	73786413345958500000	1180582613535336431616	34359607296	17179869184	295145653383834000000	8589901824	4294967296	4722330454141340000000	137438429184	47223304542100600000	17179869184	9007130535395328	137438691328
19	524287	262144	262143	137438691328	274876858369	34359672832	1180587117122080000000	18889393873953262403584	137438691328	68719476736	4722348468488320000000	34359672832	17179869184	7555757549581310000000	549754765312	755575754960880000000	68719476736	72057319160283136	549755289600
p	Mersenne Primes = 2 ^{p-1} = (2 ⁿ⁺¹) - 1	2 ^{p-1} = 2 ⁿ = x	x-1 = y	Σ·x/2 =PN =xz	Mersenne Prime Square (MPS) =z ²	PN/4=s =xz/4	Square Area, s ² =N ² z ² =(PN/4) ² =A _{MPS}	PN ² =16A	16A/PN	16A/MPS	4A	4A/PN	4A/MPS	64A	64A/PN	64A/MPS	PN ² /MPS=(xz) ² /z ² =16N ²	PN·z=16A/x	4PN+2x =PN _{next}

Table 154: Perimeters (P): P=4PN/x=4xz/x=4z PN=xP/4=#P/N where # (of MPS)=x/4•N (number of P)=xN/4=n² x=4#/N N=4#/x=PN/P z=P/4, and remember x=(z+1)/2 x_{next}=z+1 y_{next}=z.
 Ex: z=31 4z=4•31=124=P x=(z+1)/2=16 PN=xz=16•31=496 N=PN/P=496/124=4 #=xN/4=N²=4²=16. Knowing x, then x²/4²=#. Note that (z² + z)/2 = PN = xz = (MPS+Mp)/2.
 The "NEXT" PN container is simply 4PN+2x=PN_{next}. See Tables 146-150. PN²=16A. PN·z=PN²/x=16A/x