

Table 86: List of the 51 Mersenne Prime Numbers, x, Perfect Numbers and Δ in p/24 and n24

List of the 51 Mersenne Prime Numbers, x , Perfect Numbers and Δ in p/24 and n24										
#	p	p/24	n	n24	Δ from p	2 <sup>p-1</sup> = 2 <sup>n</sup> = x	2 <sup>p-1</sup> = 2 <sup>n</sup> = x	Mersenne Primes = 2 <sup>p-1</sup> = (2 <sup>n+1</sup> ) - 1 = z	Perfect Number = xz	
1	2	0.1	1	24	22	2 <sup>1</sup>	2	2 <sup>2-1</sup>	2 <sup>1</sup> · (2 <sup>2-1</sup> )	
2	3	0.1	1	24	21	2 <sup>2</sup>	4	2 <sup>3-1</sup>	2 <sup>2</sup> · (2 <sup>3-1</sup> )	
3	5	0.2	1	24	19	2 <sup>4</sup>	16	2 <sup>5-1</sup>	2 <sup>4</sup> · (2 <sup>5-1</sup> )	
4	7	0.3	1	24	17	2 <sup>6</sup>	64	2 <sup>7-1</sup>	2 <sup>6</sup> · (2 <sup>7-1</sup> )	
5	13	0.5	1	24	11	2 <sup>12</sup>	4096	2 <sup>13-1</sup>	2 <sup>12</sup> · (2 <sup>13-1</sup> )	
6	17	0.7	1	24	7	2 <sup>16</sup>	65536	2 <sup>17-1</sup>	2 <sup>16</sup> · (2 <sup>17-1</sup> )	
7	19	0.8	1	24	5	2 <sup>18</sup>	262144	2 <sup>19-1</sup>	2 <sup>18</sup> · (2 <sup>19-1</sup> )	
8	31	1.3	1	24	-7	2 <sup>30</sup>	1073741824	2 <sup>31-1</sup>	2 <sup>30</sup> · (2 <sup>31-1</sup> )	
9	61	2.5	3	72	11	2 <sup>60</sup>	1152921504606846976	2 <sup>61-1</sup>	2 <sup>60</sup> · (2 <sup>61-1</sup> )	
10	89	3.7	4	96	7	2 <sup>88</sup>	309485009821345068724781056	2 <sup>89-1</sup>	2 <sup>88</sup> · (2 <sup>89-1</sup> )	
11	107	4.5	4	96	-11	2 <sup>106</sup>	81129638414606681695789005144064	2 <sup>107-1</sup>	2 <sup>106</sup> · (2 <sup>107-1</sup> )	
12	127	5.3	5	120	-7	2 <sup>126</sup>	85070591730234615865843651857942052864	2 <sup>127-1</sup>	2 <sup>126</sup> · (2 <sup>127-1</sup> )	
13	521	21.7	22	528	7	2 <sup>520</sup>	34323988300653048574...8576	2 <sup>521-1</sup>	2 <sup>520</sup> · (2 <sup>521-1</sup> )	
14	607	25.3	25	600	-7	2 <sup>606</sup>	26556899640838354934...4064	2 <sup>607-1</sup>	2 <sup>606</sup> · (2 <sup>607-1</sup> )	
15	1,279	53.3	53	1272	-7	2 <sup>1,278</sup>	52039660973321995409...4544	2 <sup>1,279-1</sup>	2 <sup>1,278</sup> · (2 <sup>1,279-1</sup> )	
16	2,203	91.8	92	2208	5	2 <sup>2,202</sup>	73798995760709011754...5504	2 <sup>2,203-1</sup>	2 <sup>2,202</sup> · (2 <sup>2,203-1</sup> )	
17	2,281	95.0	95	2280	-1	2 <sup>2,280</sup>	22304377859187921478...8176	2 <sup>2,281-1</sup>	2 <sup>2,280</sup> · (2 <sup>2,281-1</sup> )	
18	3,217	134.0	134	3216	-1	2 <sup>3,216</sup>	12955854300660131388...7536	2 <sup>3,217-1</sup>	2 <sup>3,216</sup> · (2 <sup>3,217-1</sup> )	
19	4,253	177.2	177	4248	-5	2 <sup>4,252</sup>	95398503762219536903...2496	2 <sup>4,253-1</sup>	2 <sup>4,252</sup> · (2 <sup>4,253-1</sup> )	
20	4,423	184.3	184	4416	-7	2 <sup>4,422</sup>	14277127111413980695...0304	2 <sup>4,423-1</sup>	2 <sup>4,422</sup> · (2 <sup>4,423-1</sup> )	
21	9,689	403.7	404	9696	7	2 <sup>9,688</sup>	23911013940273060147...7056	2 <sup>9,689-1</sup>	2 <sup>9,688</sup> · (2 <sup>9,689-1</sup> )	
22	9,941	414.2	414	9936	-5	2 <sup>9,940</sup>	17304414124542560762...1776	2 <sup>9,941-1</sup>	2 <sup>9,940</sup> · (2 <sup>9,941-1</sup> )	
23	11,213	467.2	467	11208	-5	2 <sup>11,212</sup>	14070560068486865666...6096	2 <sup>11,213-1</sup>	2 <sup>11,212</sup> · (2 <sup>11,213-1</sup> )	
24	19,937	830.7	831	19944	7	2 <sup>19,936</sup>	21577123986940813240...0736	2 <sup>19,937-1</sup>	2 <sup>19,936</sup> · (2 <sup>19,937-1</sup> )	
25	21,701	904.2	904	21696	-5	2 <sup>21,700</sup>	22433958305952166739...1376	2 <sup>21,701-1</sup>	2 <sup>21,700</sup> · (2 <sup>21,701-1</sup> )	
26	23,209	967.0	967	23208	-1	2 <sup>23,208</sup>	20143705788949438909...2256	2 <sup>23,209-1</sup>	2 <sup>23,208</sup> · (2 <sup>23,209-1</sup> )	
27	44,497	1,854.0	1854	44496	-1	2 <sup>44,496</sup>	42725491215181690159...4336	2 <sup>44,497-1</sup>	2 <sup>44,496</sup> · (2 <sup>44,497-1</sup> )	
28	86,243	3,593.5	3593	86232	-11	2 <sup>86,242</sup>	26846399775137816076...9104	2 <sup>86,243-1</sup>	2 <sup>86,242</sup> · (2 <sup>86,243-1</sup> )	
29	110,503	4,604.3	4604	110496	-7	2 <sup>110,502</sup>		2 <sup>110,503-1</sup>	2 <sup>110,502</sup> · (2 <sup>110,503-1</sup> )	
30	132,049	5,502.0	5502	132048	-1	2 <sup>132,048</sup>		2 <sup>132,049-1</sup>	2 <sup>132,048</sup> · (2 <sup>132,049-1</sup> )	
31	216,091	9,003.8	9004	216096	5	2 <sup>216,090</sup>		2 <sup>216,091-1</sup>	2 <sup>216,090</sup> · (2 <sup>216,091-1</sup> )	
32	756,839	31,535.0	31535	756840	1	2 <sup>756,838</sup>		2 <sup>756,839-1</sup>	2 <sup>756,838</sup> · (2 <sup>756,839-1</sup> )	
33	859,433	35,809.7	35810	859440	7	2 <sup>859,432</sup>		2 <sup>859,433-1</sup>	2 <sup>859,432</sup> · (2 <sup>859,433-1</sup> )	
34	1,257,787	52,407.8	52408	1257792	5	2 <sup>1,257,786</sup>		2 <sup>1,257,787-1</sup>	2 <sup>1,257,786</sup> · (2 <sup>1,257,787-1</sup> )	
35	1,398,269	58,261.2	58261	1398264	-5	2 <sup>1,398,268</sup>		2 <sup>1,398,269-1</sup>	2 <sup>1,398,268</sup> · (2 <sup>1,398,269-1</sup> )	
36	2,976,221	124,009.2	124009	2976216	-5	2 <sup>2,976,220</sup>		2 <sup>2,976,221-1</sup>	2 <sup>2,976,220</sup> · (2 <sup>2,976,221-1</sup> )	
37	3,021,377	125,890.7	125891	3021384	7	2 <sup>3,021,376</sup>		2 <sup>3,021,377-1</sup>	2 <sup>3,021,376</sup> · (2 <sup>3,021,377-1</sup> )	
38	6,972,593	290,524.7	290525	6972600	7	2 <sup>6,972,592</sup>		2 <sup>6,972,593-1</sup>	2 <sup>6,972,592</sup> · (2 <sup>6,972,593-1</sup> )	
39	13,466,917	561,121.5	561122	13466928	11	2 <sup>13,466,916</sup>		2 <sup>13,466,917-1</sup>	2 <sup>13,466,916</sup> · (2 <sup>13,466,917-1</sup> )	
40	20,996,011	874,833.8	874834	20996016	5	2 <sup>20,996,010</sup>		2 <sup>20,996,011-1</sup>	2 <sup>20,996,010</sup> · (2 <sup>20,996,011-1</sup> )	
41	24,036,583	1,001,524.3	1001524	24036576	-7	2 <sup>24,036,582</sup>		2 <sup>24,036,583-1</sup>	2 <sup>24,036,582</sup> · (2 <sup>24,036,583-1</sup> )	
42	25,964,951	1,081,873.0	1081873	25964952	1	2 <sup>25,964,950</sup>		2 <sup>25,964,951-1</sup>	2 <sup>25,964,950</sup> · (2 <sup>25,964,951-1</sup> )	
43	30,402,457	1,266,769.0	1266769	30402456	-1	2 <sup>30,402,456</sup>		2 <sup>30,402,457-1</sup>	2 <sup>30,402,456</sup> · (2 <sup>30,402,457-1</sup> )	
44	32,582,657	1,357,610.7	1357611	32582664	7	2 <sup>32,582,656</sup>		2 <sup>32,582,657-1</sup>	2 <sup>32,582,656</sup> · (2 <sup>32,582,657-1</sup> )	
45	37,156,667	1,548,194.5	1548194	37156656	-11	2 <sup>37,156,666</sup>		2 <sup>37,156,667-1</sup>	2 <sup>37,156,666</sup> · (2 <sup>37,156,667-1</sup> )	
46	42,643,801	1,776,825.0	1776825	42643800	-1	2 <sup>42,643,800</sup>		2 <sup>42,643,801-1</sup>	2 <sup>42,643,800</sup> · (2 <sup>42,643,801-1</sup> )	
47	43,112,609	1,796,358.7	1796359	43112616	7	2 <sup>43,112,608</sup>		2 <sup>43,112,609-1</sup>	2 <sup>43,112,608</sup> · (2 <sup>43,112,609-1</sup> )	
48	57,885,161	2,411,881.7	2411882	57885168	7	2 <sup>57,885,160</sup>		2 <sup>57,885,161-1</sup>	2 <sup>57,885,160</sup> · (2 <sup>57,885,161-1</sup> )	
49*	74,207,281	3,091,970.0	3091970	74207280	-1	2 <sup>74,207,280</sup>		2 <sup>74,207,281-1</sup>	2 <sup>74,207,280</sup> · (2 <sup>74,207,281-1</sup> )	
50*	77,232,917	3,218,038.2	3218038	77232912	-5	2 <sup>77,232,916</sup>		2 <sup>77,232,917-1</sup>	2 <sup>77,232,916</sup> · (2 <sup>77,232,917-1</sup> )	
51*	82,589,933	3,441,247.2	3441247	82589928	-5	2 <sup>82,589,932</sup>		2 <sup>82,589,933-1</sup>	2 <sup>82,589,932</sup> · (2 <sup>82,589,933-1</sup> )	

Note: As  $z = x + y$ ,  $y = x - 1 = (z - 1)/2$  and  $x = (z + 1)/2$  the # of digits for "x" & "y" is typically ≈ to those of "z." The Σ of z + z digits approximates that of the PN. The Σ of z+y+z # of digits ≈ 3z ≈ 90%p. Remember:  $p = n + 1$ .

Reference: <https://www.mersenne.org/primes/> \* Provisional ranking. [https://en.wikipedia.org/wiki/List\\_of\\_Mersenne\\_primes\\_and\\_perfect\\_numbers](https://en.wikipedia.org/wiki/List_of_Mersenne_primes_and_perfect_numbers)