Table 85: List of the 51 Mersenne Prime Numbers (z), and x, & y, and the # of Digits Compared to p

List of the 51 Mersenne Prime Numbers, x , Perfect Numbers and # of Digits

#	*p*	Mersenne Primes = 2^{p}-1 = (2^{n+1}) -1 = z	Mersenne Prime (z) digits, #	2^{p-1} = 2^{n} = x	x digits, #	2^{n} - 1 = y	y digits, #	∑ x#+y#+z# ≈ 3z digits	Δ from p	% of p
1	2	2^{2}-1	1	2^{1}	1	2^{1} -1	1	3	1	150.000%
2	3	2^{3}-1	1	2^{2}	1	2^{2} -1	1	3	0	100.000%
3	5	2^{5}-1	2	2^{4}	2	2^{4} -1	2	6	1	120.000%
4	7	2^{7}-1	3	2^{6}	2	2^{6} -1	2	7	0	100.000%
5	13	2^{13}-1	4	2^{12}	4	2^{12} -1	4	12	-1	92.308%
6	17	2^{17}-1	6	2^{16}	5	2^{16} -1	5	16	-1	94.118%
7	19	2^{19}-1	6	2^{18}	6	2^{18} -1	6	18	-1	94.737%
8	31	2^{31}-1	10	2^{30}	10	2^{30} -1	10	30	-1	96.774%
9	61	2^{61}-1	19	2^{60}	19	2^{60} -1	19	57	-4	93.443%
10	89	2^{89}-1	27	2^{88}	27	2^{88} -1	27	81	-8	91.011%
11	107	2^{107}-1	33	2^{106}	32	2^{106} -1	32	97	-10	90.654%
12	127	2^{127}-1	39	2^{126}	38	2^{126} -1	38	115	-12	90.551%
13	521	2^{521}-1	157	2^{520}	157	2^{520} -1	157	471	-50	90.403%
14	607	2^{607}-1	183	2^{606}	183	2^{606} -1	183	549	-58	90.445%
15	1,279	$2^{1,279}$-1	386	$2^{1,278}$	385	$2^{1,278}$ -1	385	1156	-123	90.383%
16	2,203	$2^{2,203}$-1	664	$2^{2,202}$	663	$2^{2,202}$ -1	663	1990	-213	90.331%
17	2,281	$2^{2,281}$-1	687	$2^{2,280}$	687	$2^{2,280}$ -1	687	2061	-220	90.355%
18	3,217	$2^{3,217}$-1	969	$2^{3,216}$	969	$2^{3,216}$ -1	969	2907	-310	90.364%
19	4,253	$2^{4,253}$-1	1,281	$2^{4,252}$	1280	$2^{4,252}$ -1	1280	3841	-412	90.313%
20	4,423	$2^{4,423}$-1	1,332	$2^{4,422}$	1332	$2^{4,422}$ -1	1332	3996	-427	90.346%
21	9,689	$2^{9,689}$-1	2,917	$2^{9,688}$	2917	$2^{9,688}$ -1	2917	8751	-938	90.319%
22	9,941	$2^{9,941}$-1	2,993	$2^{9,940}$	2993	$2^{9,940}$ -1	2993	8979	-962	90.323%
23	11,213	$2^{11,213}$-1	3,376	$2^{11,212}$	3376	$2^{11,212}$ -1	3376	10128	-1085	90.324%
24	19,937	$2^{19,937}$-1	6,002	$2^{19,936}$	6002	$2^{19,936}$ -1	6002	18006	-1931	90.314%
25	21,701	$2^{21,701}$-1	6,533	$2^{21,700}$	6533	$2^{21,700}$ -1	6533	19599	-2102	90.314%
26	23,209	$2^{23,209}$-1	6,987	$2^{23,208}$	6987	$2^{23,208}$ -1	6987	20961	-2248	90.314%
27	44,497	$2^{44,497}$-1	13,395	$2^{44,496}$	13395	$2^{44,496}$ -1	13395	40185	-4312	90.309%
28	86,243	$2^{86,243}$-1	25,962	$2^{86,242}$	25962	$2^{86,242}$ -1	25962	77886	-8357	90.310%
29	110,503	$2^{110,503}$-1	33,265	$2^{110,502}$	33265	$2^{110,502}$ -1	33265	99795	-10708	90.310%
30	132,049	$2^{132,049}$-1	39,751	$2^{132,048}$	39751	$2^{132,048}$ -1	39751	119253	-12796	90.310%
31	216,091	$2^{216,091}$-1	65,050	$2^{216,090}$	65050	$2^{216,090}$ -1	65050	195150	-20941	90.309%
32	756,839	$2^{756,839}$-1	227,832	$2^{756,838}$	227831	$2^{756,838}$ -1	227831	683494	-73345	90.309%
33	859,433	$2^{859,433}$-1	258,716	$2^{859,432}$	258715	$2^{859,432}$ -1	258715	776146	-83287	90.309%
34	1,257,787	$2^{1,257,787}$-1	378,632	$2^{1,257,786}$	378632	$2^{1,257,786}$ -1	378632	1135896	-121891	90.309%
35	1,398,269	$2^{1,398,269}$-1	420,921	$2^{1,398,268}$	420921	$2^{1,398,268}$ -1	420921	1262763	-135506	90.309%
36	2,976,221	$2^{2,976,221}$-1	895,932	$2^{2,976,220}$	895932	$2^{2,976,220}$ -1	895932	2687796	-288425	90.309%
37	3,021,377	$2^{3,021,377}$-1	909,526	$2^{3,021,376}$	909525	$2^{3,021,376}$ -1	909525	2728576	-292801	90.309%
38	6,972,593	$2^{6,972,593}$-1	2,098,960	$2^{6,972,592}$	2098960	$2^{6,972,592}$ -1	2098960	6296880	-675713	90.309%
39	13,466,917	$2^{13,466,917}$-1	4,053,946	$2^{13,466,916}$	4053946	$2^{13,466,916}$ -1	4053946	12161838	-1305079	90.309%
40	20,996,011	$2^{20,996,011}$-1	6,320,430	$2^{20,996,010}$	6320429	$2^{20,996,010}$ -1	6320429	18961288	-2034723	90.309%
41	24,036,583	$2^{24,036,583}$-1	7,235,733	$2^{24,036,582}$	7235733	$2^{24,036,582}$ -1	7235733	21707199	-2329384	90.309%
42	25,964,951	$2^{25,964,951}$-1	7,816,230	$2^{25,964,950}$	7816229	$2^{25,964,950}$ -1	7816229	23448688	-2516263	90.309%
43	30,402,457	$2^{30,402,457}$-1	9,152,052	$2^{30,402,456}$	9152052	$2^{30,402,456}$ -1	9152052	27456156	-2946301	90.309%
44	32,582,657	$2^{32,582,657}$-1	9,808,358	$2^{32,582,656}$	9808357	$2^{32,582,656}$ -1	9808357	29425072	-3157585	90.309%
45	37,156,667	$2^{37,156,667}$-1	11,185,272	$2^{37,156,666}$	11185272	$2^{37,156,666}$ -1	11185272	33555816	-3600851	90.309%
46	42,643,801	$2^{42,643,801}$-1	12,837,064	$2^{42,643,800}$	12837064	$2^{42,643,800}$ -1	12837064	38511192	-4132609	90.309%
47	43,112,609	$2^{43,112,609}$-1	12,978,189	$2^{43,112,608}$	12978189	$2^{43,112,608}$ -1	12978189	38934567	-4178042	90.309%
48	57,885,161	$2^{57,885,161}$-1	17,425,170	$2^{57,885,160}$	17425170	$2^{57,885,160}$ -1	17425170	52275510	-5609651	90.309%
49*	74,207,281	$2^{74,207,281}$-1	22,338,618	$2^{74,207,280}$	22338618	$2^{74,207,280}$ -1	22338618	67015854	-7191427	90.309%
50*	77,232,917	$2^{77,232,917}$-1	23,249,425	$2^{77,232,916}$	23942524	$2^{77,232,916}$ -1	23942524	71134473	-6098444	92.104%
51*	82,589,933	$2^{82,589,933}$-1	24,862,048	$2^{82,589,932}$	24862047	$2^{82,589,932}$ -1	24862047	74586142	-8003791	90.309%

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 ∑ of z + z digits approximates that of the PN. The ∑ of x+y+z # of digits ≈ 3z ≈ 90%p. Remember: p = n + 1. If you know 2^{n} you know x, y ,z, p , z^{2} +…

Reference: https://www.mersenne.org/primes/ * Provisional ranking. https://en.wikipedia.org/wiki/List_of_Mersenne_primes_and_perfect_numbers

Table 85: List of the 51 Mersenne Prime Numbers (z), and x, y, and the # of Digits Compared to p.