
GIMPS Mersenne Prime Search

Test Report

Leo G. Levenius¹

Generated 2026-09-02 11:39 UTC

A record of GPU-accelerated primality testing performed in the search for new Mersenne primes, $2^p - 1$, under the Great Internet Mersenne Prime Search (GIMPS).

62

Mersenne numbers tested

0

probable primes found

Current GIMPS leaderboard ranks

119 First Primality Tests

343 Overall Producers

¹With the help of my friends Claudius and Gustaf-Petter-Tore.

1 Introduction

This report summarises Probable Prime (PRP) tests completed on this machine as part of GIMPS. Each test checks whether a number of the form $2^p - 1$, for a prime exponent p , is a probable prime, using the Fermat PRP test (base 3) combined with a Gerbicz error-check to detect computational errors during the run. Each completed test additionally produces a certificate (a compressed proof) that can be verified independently and is uploaded to the PrimeNet server for double-checking.

A result of *composite* means the residue test failed to return 1, proving $2^p - 1$ is not prime. A result of *probable prime* would indicate a new Mersenne prime candidate, pending independent verification.

For the underlying number theory — what Mersenne primes are, why the PRP test work, and how they relate to perfect numbers — see the author's thesis [Mersenne Primes and the Quest to Find Them](#).

2 Completed Tests

#	Exponent	Digits	Date	Result
1	159,942,383	48,147,455	2026-04-17	Composite ²
2	147,316,121	44,346,572	2026-04-28	Composite
3	147,217,223	44,316,801	2026-04-22	Composite
4	147,202,189	44,312,275	2026-04-17	Composite
5	147,202,151	44,312,263	2026-04-13	Composite
6	146,798,867	44,190,863	2026-08-18	Composite
7	146,798,279	44,190,686	2026-08-17	Composite
8	146,797,243	44,190,374	2026-08-17	Composite
9	146,796,409	44,190,123	2026-08-19	Composite
10	146,793,403	44,189,218	2026-08-31	Composite
11	146,791,847	44,188,750	2026-08-30	Composite
12	146,777,011	44,184,283	2026-08-16	Composite
13	146,773,477	44,183,220	2026-08-30	Composite
14	146,773,439	44,183,208	2026-08-29	Composite
15	146,773,397	44,183,196	2026-08-28	Composite
16	146,773,279	44,183,160	2026-08-27	Composite
17	146,773,247	44,183,150	2026-08-27	Composite
18	146,766,601	44,181,150	2026-08-26	Composite
19	146,766,527	44,181,127	2026-08-25	Composite
20	146,766,517	44,181,124	2026-08-25	Composite
21	146,766,173	44,181,021	2026-08-24	Composite
22	146,750,441	44,176,285	2026-08-20	Composite
23	146,732,161	44,170,782	2026-09-01	Composite
24	146,728,007	44,169,532	2026-08-23	Composite
25	146,727,953	44,169,516	2026-08-22	Composite
26	146,726,551	44,169,094	2026-08-15	Composite
27	146,725,991	44,168,925	2026-08-14	Composite
28	146,719,873	44,167,083	2026-08-22	Composite
29	146,716,147	44,165,962	2026-08-21	Composite

²P-1 factoring stage (B1=925,000, B2=122,789,856) found factor 2285219078073062142990257 (80.9 bits), proving $2^p - 1$ composite directly — no PRP test was needed for this exponent.

#	Exponent	Digits	Date	Result
30	146,714,431	44,165,445	2026-08-20	Composite
31	146,692,241	44,158,765	2026-09-01	Composite
32	146,517,131	44,106,052	2026-08-14	Composite
33	146,515,991	44,105,709	2026-08-13	Composite
34	146,455,259	44,087,426	2026-08-12	Composite
35	146,350,247	44,055,815	2026-08-11	Composite
36	146,283,343	44,035,675	2026-08-11	Composite
37	146,279,927	44,034,646	2026-07-31	Composite
38	146,213,183	44,014,554	2026-07-31	Composite
39	146,129,611	43,989,397	2026-07-30	Composite
40	146,065,679	43,970,151	2026-07-29	Composite
41	145,990,589	43,947,547	2026-07-28	Composite
42	145,968,283	43,940,832	2026-07-27	Composite
43	145,967,233	43,940,516	2026-07-26	Composite
44	145,967,191	43,940,503	2026-07-26	Composite
45	145,547,641	43,814,206	2026-07-24	Composite
46	145,547,609	43,814,197	2026-07-23	Composite
47	145,547,599	43,814,194	2026-07-23	Composite
48	145,547,537	43,814,175	2026-07-21	Composite
49	145,547,533	43,814,174	2026-07-21	Composite
50	145,547,431	43,814,143	2026-07-19	Composite
51	145,446,563	43,783,779	2026-07-18	Composite
52	145,446,199	43,783,669	2026-07-17	Composite
53	145,409,767	43,772,702	2026-07-15	Composite
54	145,264,033	43,728,832	2026-07-14	Composite
55	144,970,003	43,640,320	2026-07-12	Composite
56	144,936,683	43,630,290	2026-06-10	Composite
57	144,858,403	43,606,725	2026-07-07	Composite
58	144,810,451	43,592,290	2026-06-17	Composite
59	144,794,339	43,587,440	2026-07-02	Composite
60	144,764,881	43,578,572	2026-05-14	Composite
61	144,736,483	43,570,023	2026-06-25	Composite
62	142,824,707	42,994,521	2026-05-30	Composite