Primes of the form 2^a·2^b·2^c - d where a, b, c, d of the form 6k+1

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Abstract. In this paper I make the following conjecture: For any a, b, c distinct numbers of the form 6*k + 1 there exist an infinity of numbers d of the form 6*h + 1 such that the number n = 2^a*2^b*2^c - d is prime. This is a formula that conducts often to primes and composites with very few prime factors; for instance, taking a = 7 and b = 13 are obtained eighteen primes for c and d both less than 100 (for c = 19, n is prime for four values of d up to 100: 7, 19, 67, 91)! Also note that for [a, b, c, d] = [49, 55, 61, 61] (all four less than or equal to 61) is obtained a prime with 50 digits!

Conjecture:

For any a, b, c distinct numbers of the form 6*k + 1 there exist an infinity of numbers d of the form 6*h + 1 such that the number n = 2^a*2^b*2^c - d is prime.

The first four primes n for [a, b, c] = [7, 13, 19]:

: n = 2^7*2^13*2^19 - 7 = 549755813881;
: n = 2^7*2^13*2^19 - 19 = 549755813869;
: n = 2^7*2^13*2^19 - 67 = 549755813821;
: n = 2^7*2^13*2^19 - 91 = 549755813797.

The less primes n for [a, b]=[7, 13] and c from 19 to 91:

: n = 2^7*2^13*2^19 - 7 = 549755813881;
: n = 2^7*2^13*2^25 - 55 = 35184372088777;
: n = 2^7*2^13*2^31 - 139 = 2251799813685109;
: n = 2^7*2^13*2^37 - 13 = 144115188075855859;
: n = 2^7*2^13*2^43 - 25 = 9223372036854775783;
: n = 2^7*2^13*2^49 - 19 = 590295810358705651693;
: n = 2^7*2^13*2^55 - 97 = 37778931862957161709471;
: n = 2^7*2^13*2^61 - 163 = 2417851639229258349412189;
: n = 2^7*2^13*2^67 - 67 = 154742504910672534362390461;
: n = 2^7*2^13*2^73 - 25 = 9903520314283042199192993767;
: n = 2^7*2^13*2^79 - 115 = 633825300114114700748351602573;
: n = 2^7*2^13*2^85 - 13 = 40564819207303340847894502572019;
: n = 2^7*2^13*2^91 - 37 = 2596148429267413814265248164610011.

The largest two primes n for a, b, c, d less than or equal to 61:

: n = 2^49*2^55*2^61 - 25 = 46768052394588893382517914646921056628989841375207;
: n = 2^49*2^55*2^61 - 61 = 46768052394588893382517914646921056628989841375171.