# Conjecture involving repunits, repdigits, repnumbers and also the primes of the form 30k+11 and 30k+13

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**Abstract.** In my previous paper "Conjecture on semiprimes n = p*q related to the number of primes up to n" I was wondering if there exist a class of numbers n for which the number of primes up to n of the form 30k + 1, 30k + 7, 30k + 11, 30k + 13, 30k + 17, 30k + 19, 30k + 23 and 30k + 29 is equal in each of these eight sets. I didn't yet find such a class, but I observed that around the repdigits, repunits and repnumbers (numbers obtained concatenating not the unit or a digit but a number) the distribution of primes in these eight sets tends to draw closer and I made a conjecture about it.

**Conjecture:**

There exist an infinity of repnumbers n (repunits, repdigits and numbers obtained concatenating not the unit or a digit but a number) for which the number of primes up to n of the form 30k + 11 is equal to the number of primes up to n of the form 30k + 13.

**The sequence of these repnumbers n:**
(in the bracket is the number of primes up to n, equally for each of to the two sets)

: 22 (1), 33(1), 44(2), 55(2), 66(2), 77(3), 88(3), 99(3), 111 (4), 222(6), 333(9), 444(11), 666(15), 777(17), 1818(36), 2020(39), 2828(52), 2929(53)...

**Few larger such repnumbers n:**

: 11111, because we have up to n :
  : 167 primes of the form 30k + 11;
  : 167 primes of the form 30k + 13;

: 888888, because we have up to n :
  : 8816 primes of the form 30k + 11;
  : 8816 primes of the form 30k + 13;

: 11111111, because we have up to n :
  : 91687 primes of the form 30k + 11;
  : 91687 primes of the form 30k + 13.