Title Twin Prime Conjecture

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Abstract The Twin Prime Conjecture states there are infinitely many pairs of primes that differ by 2.

Examples of twin primes are:

11, 13
71, 73
5021, 5023

Method This attempt uses Bertrand’s postulate.

There is currently no known function for predicting every individual prime but as expected, the frequency of twin primes slows as the primes get larger.

(T)wins	(P)rimes	T/P
60	300	.200
166	600	.193
145	800	.181
175	1000	.175

Bertrand's Postulate, for which there are several proofs, states that for any number n>1 there is always a prime between n and 2n.

Thus for a prime P the next prime is in the following set of odd numbers:

{P+2, P+4, ..., P+P-1}

In other words, the difference between P and the next prime is in the set S:

{2, 4, ..., P-1} (S)

Clearly as P increases so does the size of (S) but the possibility of a difference of 2, producing a twin, remains.

Hence the likelihood (probability) of a difference of 2 between P and the next prime is >=0 and since the number of primes (P) is infinite so is the number of twins.