

Claim: Every prime number is either one fewer or one more than a multiple of 6.

PF Assume a, b, c, d, e, f is a consecutive list of six whole numbers, with a being a multiple of 6.

Then c and e are both even which means they are not prime.

And d will be a multiple of 3, since a is also a multiple of 3 and $d = a + 3$.

So d is composite and not prime.

Then, the only possible numbers in this list that could be prime are b and f .

And b ~~is~~ is one more than a multiple of 6 (since a is a multiple of 6) and f is one fewer than a multiple of 6 (since $a + 6$, the number after f , is also a multiple of 6).

\Rightarrow Numbers one fewer or one more than a multiple of 6 are not necessarily prime. But if a # is prime, it is one more than or one fewer than a multiple of 6. //