

5 (a) Prove that the following statement is **not** true.

m is an odd number greater than 1 $\Rightarrow m^2 + 4$ is prime. [1]

(b) By considering separately the case when n is odd and the case when n is even, prove that the following statement **is** true.

n is a positive integer $\Rightarrow n^2 + 1$ is not a multiple of 4. [4]