Answer on Question #76367 – Math – Discrete Mathematics

Question

Prove that for all integers n with 1≤n≤10, n^2 −n+11 is prime.

Solution

Define $f(n) = n^2 - n + 11$.

$f(1) = 1^2 - 1 + 11 = 11$ is prime.

$f(2) = 2^2 - 2 + 11 = 13$ is prime.

$f(3) = 3^2 - 3 + 11 = 17$ is prime.

$f(4) = 4^2 - 4 + 11 = 23$ is prime.

$f(5) = 5^2 - 5 + 11 = 31$ is prime.

$f(6) = 6^2 - 6 + 11 = 41$ is prime.

$f(7) = 7^2 - 7 + 11 = 53$ is prime.

$f(8) = 8^2 - 8 + 11 = 67$ is prime.

$f(9) = 9^2 - 9 + 11 = 83$ is prime.

$f(10) = 10^2 - 10 + 11 = 101$ is prime, QED.