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CSIS 213-3941

Assignment 7&8 Quiz Part 2

**Question 3**

Prove this statement by the method of exhaustion:

**For each integer n with 1 ≤ n ≤ 10, n2− n + 11 is a prime number.**

**Proof:**

**Case 1: If n = 1, then 1 – 1 + 11 = 11, which is prime,**

**Case 2:** If n = 2, then 4 – 2 + 11 = 13, which is prime,

**Case 3:** If n = 3, then 9 – 3 + 11 = 17, which is prime,

**Case 4:** If n= 4, then 16 – 4 + 11 = 23, which is prime,

**Case 5:** If n= 5, then 25 - 5 + 11 = 31, which is prime,

**Case 6:** If n= 6, then 36 - 6 + 11 = 41, which is prime,

**Case 7:** If n= 7, then 49 - 7 + 11 = 53, which is prime,

**Case 8:** If n= 8, then 64 - 8 + 11 = 67, which is prime,

**Case 9:** If n= 9, then 81 - 9 + 11 = 83, which is prime,

**Case 10:** If n= 10, then 100 - 10 + 11 = 101, which is prime,

This process shows that for each integer n with 1<= n <= 10, n^2 – n + 11 is a prime number.