

MAT 302 – 001

Spring 2009

Review for Test One

There will be 5 problems to do in class and 1 to turn in on the Monday after the test.

Prove or disprove each statement.

1. If x is an odd integer, then $4x^2 + x + 6$ is odd.
2. If p is a prime and $p > 2$, prove that p is odd.
3. $p \neq q$ and p and q are primes. If x is a positive integer that divides both p and q , then $x = 1$.
4. For all natural numbers m , $m^2 - m$ is even.
5. For all positive integers x , $x^2 + x + 41$ is a prime.
6. Prove that if $x \notin B$ and $A \subseteq B$, then $x \notin A$.
7. Prove that the sum of five consecutive integers is divisible by 5.
8. m is an integer. If m is odd, then m^2 is odd.