

MAT 302 – 001

Spring 2009

Test One

Do 5 problems in class and turn in 1 additional problem on the Monday.

For the 5 problems done in class, 13 points correctness and 3 point style.

For the 1 problem turned in on Monday, 10 points correctness and 10 points style.

Prove or disprove each statement.

1. If $A \subseteq B \cup C$ and $A \cap B = \emptyset$, then $A \subseteq C$.
2. If $C \subseteq A$ and $D \subseteq B$, then $D - A \subseteq B - C$.
3. If a, b are positive integers and $a|b$ and $b|a$, then $a = b$.
4. If m is an integer and m^2 is odd, then m is odd.
5. If a, b, c , are positive integers and $(ac)|(bc)$, then $a|b$.
6. If x is an integer, then $x^2 + 3x + 1$ is odd.
7. $A - (B \cup C) = (A - B) \cap (A - C)$.
8. If every even natural number greater than 2 is the sum of two primes, then every odd natural number greater than 5 is the sum of 3 primes.
9. There is no largest natural number.