Quiz 5A, MTH 2010 - No Calculators

Dr. Graham-Squire, Spring 2015

Name: _____

1. (2 points) Suppose the difference between two counting numbers is odd. What can you say about the *sum* of the two numbers? <u>Explain why</u> your answer is always correct, and make your answer general–just giving one example is NOT a full explanation.

2. (3 points) A chocolate distributor is trying to divide an order of chocolate candies into equally sized groups for shipping in boxes. The candies can be divided into groups of 12 or groups of 45, with no candies left over. Which of the following inequalities is satisfied if C is the smallest possible total number of candies? Show/explain your work!

   (a) $C < 50$

   (b) $50 \leq C < 150$

   (c) $150 \leq C < 250$

   (d) $250 \leq C$

3. (2 points) Is 163 a prime number? State yes or no, and explain how you <u>know</u> it is or is not a prime.

4. (3 points)

   The letters A and B represent digits (possibly equal) in the ten digit number $x = 1,438,152,A3B$. For which values of A and B is x divisible by 12, but not by 9? Show/explain your work!

   (a) $A = 0$, $B = 4$

   (b) $A = 7$, $B = 2$

   (c) $A = 0$, $B = 6$

   (d) $A = 4$, $B = 8$