MATH 100

Test 2

April 8, 2008

Name:

- No books, notes, or calculators are allowed.

- Please show all your work.

- Always explain your solutions and calculations.

- Each problem is worth 3 points.

- Suggestion: do the required problems first. If you have time, do the extra credit problem.

1. A test in a Geometry class is worth 50 points. Ten students took the test and got scores 25, 25, 30, 30, 35, 40, 40, 45, 45, 45, 50. Find the mean, median, and mode of these scores.

2. Answer "true" or "false". (Note: you are not required to provide explanations, but you may receive partial credit if your explanations are on a right track even if they contain mistakes and your answer is wrong.)

   (a) The number 1 is rational.

   (b) The quotient of two irrational numbers is always irrational.

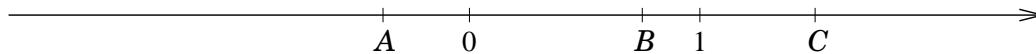   (c) If a is a multiple of b, then $\dfrac{a}{b}$ is an integer.

3. (a) Answer "true" or "false". Explain using the definition.

    i. 10 divides 50

    ii. 10 is divisible by 50

(b) Find the greatest common factor and the least common multiple of 10 and 50.

4. Numbers A, B, and C are shown on the real number line below.

Determine and show on the same picture approximate locations of the following numbers:

(a) $A + B$

(b) $B - A$

(c) AC

5. Solve the following equation over the set of real numbers:
$$\frac{x - 3}{2} = \frac{x + 2}{3}$$

6. **For extra credit:** Find an irrational number between 1.2345678 and 1.23456789.