Name (PRINTED): ____________________

Student ID #: ____________________

Section # (or TA's: name and time) ____________________

CMSC 250 Quiz #6 Wednesday, Mar. 3, 2004

Write all answers legibly in the space provided. The number of points possible for each question is indicated in square brackets – the total number of points on the quiz is 30, and you will have exactly 20 minutes to complete this quiz. You may not use calculators, textbooks or any other aids during this quiz.

1. [24 pnts.] Disprove by counter example or Prove each of the following:

   a. The product of any rational number with an integer is a rational number.

   b. For all integers n, if n is odd then n^2 is odd.

   c. For all integers n and m, $(n + m) > m$.

2. [6 pnts.] State Yes or No for each of the following (only a small justification for your answer is necessary not a complete proof). Assume a, b and c are integers and x, y and z are rationals for all of the following questions.

a. __________ If a, b, and c are even, $\frac{a+b+c}{2}$ is also even.

b. __________ $x + y \leq x \cdot y$

c. __________ If $a > b$ and $x > y$, then $a \cdot x > b \cdot y$