Math Awareness Month Competition
2012 Examination for 7-9th Grades

DIRECTIONS: [40 Minutes - 5 Questions] Start each new problem on a separate page.
Show your work! Answers must be exact. You are allowed to use a calculator.
You are not allowed to borrow or interchange calculators during the test.

1. The length of the side of a blue equilateral triangle is four times the length of a side of a red equilateral triangle. What is the largest number of red triangles that will fit into one blue triangle without overlapping the red triangles?

2. Two vertical poles of heights 20 ft and 30 ft are standing 25 ft apart. Ropes are stretched from the top of each pole to the bottom of the other. How far above the ground do the ropes cross?

3. Find the area of the triangle with vertices at coordinates $(0, 0), (3, 4), (5, 8)$.

4. A boy ate a total of 50 cookies in a number of consecutive days. Each day he ate 5 more cookies than the day before. How many cookies did he eat on the last day?

5. How many three-digit numbers are there whose product of all the digits is a perfect cube?