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# MATHCOUNTS®

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2011

■ School Competition ■  
Target Round  
Problems 1 and 2

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Name \_\_\_\_\_

**DO NOT BEGIN UNTIL YOU ARE  
INSTRUCTED TO DO SO.**

This section of the competition consists of eight problems, which will be presented in pairs. Work on one pair of problems will be completed and answers will be collected before the next pair is distributed. The time limit for each pair of problems is six minutes. The first pair of problems is on the other side of this sheet. When told to do so, turn the page over and begin working. This round assumes the use of calculators, and calculations also may be done on scratch paper, but no other aids are allowed. All answers must be complete, legible and simplified to lowest terms. Record only final answers in the blanks in the right-hand column of the problem sheets. If you complete the problems before time is called, use the time remaining to check your answers.

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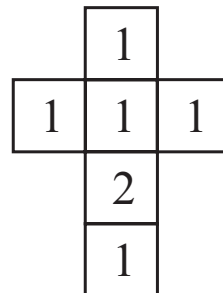
1. At the Cupcake Cottage, you can buy single cupcakes, packages of six cupcakes, or packages of twelve cupcakes. Mr. Kelly wants to purchase cupcakes for the softball picnic. He wants to buy enough cupcakes so that each of the 16 players on each of the 8 teams in the league will get one cupcake. Given the prices listed below, what is the least amount of money he can spend to purchase the cupcakes?

1. \$ \_\_\_\_\_

Cupcake Cottage Price List

Number of Cupcakes	Cost of Cupcakes
1	\$1.50
6	\$8.50
12	\$16.00

2. If this shape is folded into a cube and rolled, one face of the cube will be on the table while the other faces will be showing. What is the probability that the sum of the numbers on the faces that are showing will be odd? Express your answer as a common fraction.



2. \_\_\_\_\_

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# MATHCOUNTS<sup>®</sup>

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2011

■ School Competition ■

Target Round

Problems 3 and 4

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Name \_\_\_\_\_

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3. The eighth grade at Memorial Middle School is selling wrapping paper and gift bags to raise money for a field trip. They sold one-half as many rolls of wrapping paper as they did gift bags. The profit they make for each roll of wrapping paper is \$2.50 and for each gift bag is \$1.50. If the total profit was \$704, how many gift bags were sold?

3. \_\_\_\_\_ gift bags

4. A can of tuna that contained 6 ounces of tuna sold for \$1.20. The can was redesigned to hold only 5 ounces. The price remained at \$1.20. What was the percent increase in the cost per ounce of tuna?

4. \_\_\_\_\_ %

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# MATHCOUNTS®

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2011

■ School Competition ■

Target Round

Problems 5 and 6

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Name \_\_\_\_\_

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5. How many non-congruent triangles with only integer side lengths have a perimeter of 15 units?

5. \_\_\_\_\_ triangles

6. Tom finds that his \$35 will buy exactly 19 pounds of bananas and 5 pounds of oranges or it will buy 6 pounds of bananas and 20 pounds of oranges. How much more than \$35 would 25 pounds of each fruit cost?

6. \$ \_\_\_\_\_

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# MATHCOUNTS®

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2011

■ School Competition ■

Target Round

Problems 7 and 8

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Name \_\_\_\_\_

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7. Jackie, Karen and Lex helped Mrs. Jones with spring cleaning. Jackie worked  $5\frac{1}{2}$  hours, Karen worked 3 hours and Lex worked  $1\frac{1}{2}$  hours. Mrs. Jones paid them a total of \$75.00. If each worker received the same amount per hour, how much was Jackie paid?

7. \$ \_\_\_\_\_

8. A rectangular pool is  $x$  feet by  $(x + 10)$  feet. A walkway that is 3 feet wide is placed completely around the pool forming a larger rectangle. The area of the rectangle formed by the pool and walkway is 192 square feet greater than the area of the pool alone. What is the area of the pool, in square feet?

8. \_\_\_\_\_ sq feet