MOCK MATHCOUNTS

2009
■ School Competition ■
Target Round
Problems 1 & 2

Name _____

State _____

PRIVATE MESSAGE YOUR ANSWERS TO EITHER ernie, PowerOfPi, pytheagle, OR vallon22.

This round of the competition consists of 4 pairs of 2 problems. You will have 6 minutes to complete each pair of problems. You are allowed to use calculators during this round. Calculations may also be done on scratch paper. 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 competition booklet. If you complete the problems before time is called, use the remaining time to check your answers.

Total Correct	Scorer's Initials

1. Joe is building a doghouse for his dog. He needs 3 sheets of wood for the walls and 2 sheets for the roof. Each sheet of wood for walls costs $6.48 each and $5.28 each for the roof, including tax. If Joe has a 25%-off coupon, how many cents will he save? Give your answer in cents.

1. _____

2. Henry rode his bicycle uphill to his friend's house, which is 8 miles away in a town nearby, at 2 miles per hour. He rode back downhill at a speed of 4 miles per hour. What was his average speed in miles per hour? Give your answer as a common fraction.

2. _____

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2009
■ **School Competition** ■
Target Round
Problems 3 & 4

Name _____

State _____

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Total Correct	Scorer's Initials

3. Two dice are rolled. What is the probability that the sum of the two dice is divisible by 3? Express your answer as a common fraction.

3. _____

4. A set of positive integers has a mean of 3, median of 3, and no mode. What is the greatest possible number of integers in the set?

4. _____

MOCK

MATHCOUNTS

2009
■ **School Competition** ■
Target Round
Problems 5 & 6

Name _____

State _____

**PRIVATE MESSAGE YOUR ANSWERS TO
EITHER ernie, PowerOfPi, pytheagle, OR vallon22.**

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have 6 minutes to complete each pair of problems. You are allowed to use
calculators during this round. Calculations may also be done on scratch paper.
All answers must be complete, legible, and simplified to lowest terms.
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Total Correct	Scorer's Initials

5. Kyle is spinning a dartboard. The outermost edge is a circle with a radius of 8 inches and the innermost ring is a circle with a radius of 1 inch. If the dartboard is spun exactly once, then how many times more distance does the outermost edge travel compared to the innermost ring?

5. _____

6. A triangle has area 60. Each side of the triangle is then doubled. Then, a line is drawn so that it cuts the triangle into another triangle and a quadrilateral with equal areas. This figure is then scaled such that its area is 15. What is the positive difference between the area of the final quadrilateral and the area of the unscaled quadrilateral?

6. _____

MOCK

MATHCOUNTS

2009
■ **School Competition** ■
Target Round
Problems 7 & 8

Name _____

State _____

PRIVATE MESSAGE YOUR ANSWERS TO EITHER ernie, PowerOfPi, pytheagle, OR vallon22.

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Total Correct	Scorer's Initials

7. Find the largest possible value of x if x and y are positive integers and $3x+4y+5xy=36$.

7. _____

8. Mary wakes up at 6:00 AM every day. She leaves for school one hour later. It takes a quarter of hour to get to the school. She has six fifty-minute classes with five 5 minute breaks in between. She has lunch for an additional half hour. It takes her fifteen more minutes to get back home after school. How many minutes after noon does she get home? Express your answer in minutes.

8. _____