MATHCOUNTS®

2005
■ School Competition ■
Target Round
Problems 1 and 2

Name _____

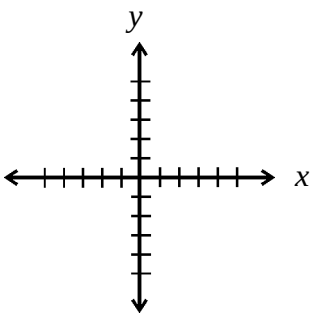
DO NOT BEGIN UNTIL YOU ARE INSTRUCTED TO DO SO.

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. Record only final answers in the designated blanks on the problem sheet. All answers must be complete, legible and simplified to lowest terms. This round assumes the use of calculators, and calculations may also be done on scratch paper, but no other aids are allowed. If you complete the problems before time is called, use the time remaining to check your answers.

Total Correct	Scorer's Initials

1. The point A(3, 3) is reflected across the x-axis to A'. Then A' is translated two units to the left to A". The coordinates of A" are (x, y). What is the value of $x + y$?

1. _____



2. Divide the product of the first five positive composite integers by the product of the next five composite integers. Express your answer as a common fraction.

2. _____

MATHCOUNTS®

2005
■ School Competition ■
Target Round
Problems 3 and 4

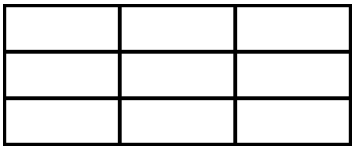
Name _____

DO NOT BEGIN UNTIL YOU ARE INSTRUCTED TO DO SO.

Total Correct	Scorer's Initials

3. If $f(x) = \dfrac{3x - 2}{x - 2}$, what is the value of $f(-2) + f(-1) + f(0)$? Express your answer as a common fraction. 3. _____

4. How many rectangles are in the array below? 4. _____ rectangles



MATHCOUNTS®

2005
■ School Competition ■
Target Round
Problems 5 and 6

Name _____

DO NOT BEGIN UNTIL YOU ARE INSTRUCTED TO DO SO.

Total Correct	Scorer's Initials

5. Giovanni and Jean started a 120-mile bicycle race at the same time. Giovanni cycled at 23.9 miles per hour while Jean cycled at 24 miles per hour. When Jean crossed the finish line, how many miles was Giovanni from the finish line? Express your answer as a decimal to the nearest tenth.

5. _____ miles

6. If A, B and C are positive integers such that $\frac{A\sqrt{B}}{C} = \frac{9}{2\sqrt{3}}$, what is the value of A + B + C given that A and C have no common prime factors, and B has no perfect-square factors other than 1?

6. _____

MATHCOUNTS®

2005
■ School Competition ■
Target Round
Problems 7 and 8

Name _____

DO NOT BEGIN UNTIL YOU ARE INSTRUCTED TO DO SO.

Total Correct	Scorer's Initials

7. The average American consumes 1483 pounds of candy in a lifetime. Assuming that 1 year = 52 weeks and the average life-span is 75 years, how many pounds of candy per week does the average American consume? Express your answer as a decimal to the nearest hundredth.

7. _____ lbs/week

8. Amanda has recorded how long it takes her to do her morning activities. She does all of the listed activities each day. She starts the first activity at 7:30 a.m. and has a two-minute break between each pair of activities. At what time does she finish all of her activities each morning?

Activity	Time to Complete
Shower & Dress	15 minutes
Prepare & Eat Breakfast	20 minutes
Chores	35 minutes
Practice Piano	45 minutes

8. _____ a.m.