MATHCOUNTS

1995–96
■ Chapter Competition ■
Target Round
Problems 1 and 2

Name _____

School _____

DO NOT BEGIN UNTIL YOU ARE INSTRUCTED TO DO SO.

This round of the competition consists of eight problems. They will be presented to you in pairs. Work on one pair of the problems will be completed and answers will be collected before the next pair is distributed. The time limit for each set of two 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 read silently as the problems are read aloud. Pencils are to be down while the problems are being read. When instructed to begin, pick up your pencil and begin working. Record your final answer in the designated space 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

MATHCOUNTS is a cooperative project of the National Society of Professional Engineers, The Dow Chemical Company Foundation, the CNA Insurance Companies, the General Motors Foundation, the Intel Foundation, Texas Instruments Incorporated, the National Council of Teachers of Mathematics, and the National Aeronautics and Space Administration.

1. A phone call costs \$1.75 for the first minute and \$0.65 per minute for each additional minute. What is the number of dollars, to the nearest cent, in the cost of a 15-minute call?

1. _____

2. An ordered pair (m, n), where m and n are integers, $1 \leq m \leq 4$ and $1 \leq n \leq 8$, is selected at random. Express as a common fraction the probability that both m and n are even.

2. _____

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Target Round
Problems 3 and 4

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3. What is the probability that a positive integer $n \leq 1000$, randomly selected, is divisible by 6? Express your answer as a terminating decimal. 3. _____

4. In the equation $858 = a \cdot b$, a and b are both two-digit numbers. What is the greatest possible value of $a + b$? 4. _____

MATHCOUNTS

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Target Round
Problems 5 and 6

Name _____

School _____

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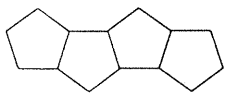
5. What is the product of the sum of the first three primes and the sum of the reciprocals of the first three primes? Express your answer as a mixed number. 5. _____

6. A pentagon train is made by attaching regular pentagons with one-inch sides so that each pentagon, except the two on the ends, is attached to exactly two other pentagons along sides as shown. How many inches are in the perimeter of a pentagon train made from 85 pentagons? 6. _____



MATHCOUNTS

1995–96
■ Chapter Competition ■
Target Round
Problems 7 and 8

Name _____

School _____

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Total Correct	Scorer's Initials

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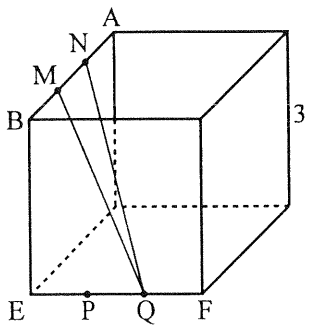
7. In the cube pictured, M and N are trisection points of $\overline{AB}$, P and Q are trisection points of $\overline{EF}$, and each edge is 3 units in length. What is the number of units, rounded to the nearest tenth, in the perimeter of $\triangle MNQ$?

7. _____



8. A team which is halfway through its season has won 30 of the 40 games it has played. The team is hoping to finish with at least 70% wins. What is the minimum number of games out of the next 40 games they will have to win?

8. _____