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# MATHCOUNTS

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1994-95

■ Chapter Competition ■

Target Round

Problems 1 and 2

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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.

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Total Correct	Scorer's Initials

MATHCOUNTS is a cooperative project of the National Society of Professional Engineers, 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. Sally has a digital alarm clock that automatically resets to 12:00 midnight when there is a power outage. When she returned home from school, she discovered the power had been out, but was on again. Her clock read 4:13 a.m. when the actual time was 3:10 p.m. At what time did the power return? (Assume she left for school at 7:50 a.m.)

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

2. A square is divided into four congruent regions. One-third of the area of the first square is removed, one-sixth of the area of the second square is removed, and one-twelfth of the area of the third square is removed. To the nearest whole number, what percent of the original area remains?

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

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# MATHCOUNTS

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1994-95

■ Chapter Competition ■

Target Round

Problems 3 and 4

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Name \_\_\_\_\_

School \_\_\_\_\_

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3. On her trip to Paris, Helene spent \$150 on gifts. If the French franc was worth \$0.2148, how many francs did she spend? Round your answer to the nearest franc.

3. \_\_\_\_\_

4. Square  $SQRE$  has vertices  $S(0, 4)$ ,  $Q(0, -2)$ ,  $R(-6, -2)$ , and  $E(-6, 4)$ . Each coordinate is multiplied by 2. By what factor is the area of the old quadrilateral multiplied to obtain the new area?

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

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# MATHCOUNTS

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1994-95

■ Chapter Competition ■

Target Round

Problems 5 and 6

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Name \_\_\_\_\_

School \_\_\_\_\_

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5. Squares are faster than circles, hexagons are slower than triangles, and hexagons are faster than squares. Which of these shapes is the slowest?

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

6. To the nearest whole number, find the number of revolutions a 27-inch diameter bicycle wheel makes in a five-mile race? Use 3.14 as an approximation for  $\pi$ .

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

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# MATHCOUNTS

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1994-95

■ Chapter Competition ■

Target Round

Problems 7 and 8

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Name \_\_\_\_\_

School \_\_\_\_\_

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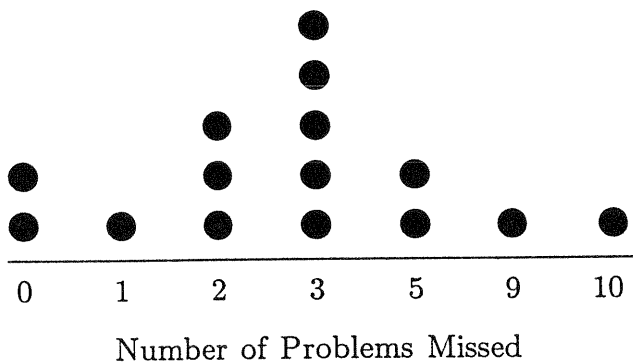
Total Correct	Scorer's Initials

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7. Use the histogram to determine the mean number of problems missed on the last mathematics test. Express your answer as a decimal.

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

Each ● represents two (2) students



8. Two sides of a triangle measure 2" and 4" and the third side measures some whole number of inches. If a cube with faces numbered 1 through 6 is rolled, what is the probability, expressed as a common fraction, that the number showing on top could be the number of inches in the length of the third side of the triangle?

8. \_\_\_\_\_