
MATHCOUNTS

1993-94

■ Chapter Competition ■

Target Round
Problems 1 and 2

Name _____

School _____

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

This section 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 CNA Insurance Companies, the Cray Research Foundation, 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. What is the smallest prime the sum of whose digits is 19 ?

1. _____

2. Find the mean of all digits which cannot be the last digit of a perfect square.

2. _____

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Target Round

Problems 3 and 4

Name _____

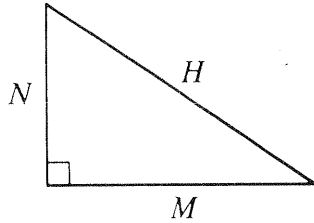
School _____

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3. In the given right triangle, if M is twice as long as N then H is what percent of N ? Round your answer to the nearest whole number percent.



3. _____

4. Houses on the north side of Elm Street are numbered with consecutive even integers from 1,902 to 2,192. How many houses are there on the north side of Elm Street?

4. _____

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Target Round

Problems 5 and 6

Name _____

School _____

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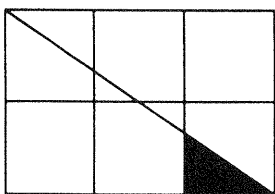
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5. Two fuel tanks, one a cylinder and one a cone, are full of jet fuel. The cylindrical tank holds 500 gallons more than the conical one. If 200 gallons are pumped from each tank the cylindrical one will contain twice as much fuel as the conical one. How many gallons of jet fuel does the cylindrical tank contain when it is full?

5. _____

6. How many square units are in the shaded triangle shown on the 3 by 2 grid of unit squares? Express your answer as a common fraction.

6. _____



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Target Round

Problems 7 and 8

Name _____

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7. What is the mean of 7 numbers if the mean of the first two is 11 and the mean of the last 5 is 18 ?

7. _____

8. What is the fewest number of L-shaped tiles taken from a supply of tiles in the given shape which can be placed entirely on the 5 by 5 grid so that no more tiles can be placed on the board without overlapping? Assume each square of a tile completely covers a square on the grid and reflections and rotations of tiles are allowed.

8. _____

