
MATHCOUNTS

1989-90

■ Chapter Competition ■

Target Round

Questions 1 and 2

Name _____

School _____

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

You will have 6 minutes to complete each pair of questions in this round. Calculators, slide rules, books, or any other aids are not permitted to be used during the contest. Calculations may be done on scratch paper. All answers must be complete, legible, and simplified to lowest terms. Record only final answers in the blank in the right column of the contest page. If you complete work on a pair of questions before time is called, use the remaining time 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 National Council of Teachers of Mathematics, the National Aeronautics and Space Administration, and the United States Department of Education.

1. A salesperson in a home appliance store is paid \$50 per day plus \$25 for each major appliance he sells. If the salesperson wants to earn at least \$1200 per week (five days per week), what is the minimum number of major appliances he must sell per week?

1. _____

2. If the population of Rosebud is 6000 and increases 5% per year, what will the population be at the end of two years?

2. _____

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Target Round

Questions 3 and 4

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3. Jack is Jill's brother. Jack has as many brothers as sisters. Jill has twice as many brothers as sisters. How many children are in the family?

3. _____

4. Find the smallest whole number value of x that satisfies this inequality.

4. _____

$$5x - \frac{1}{3} > \frac{1}{5} + 3x$$

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Questions 5 and 6

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5. Two regular fair dice are rolled and the sum of the dots on the upper faces is recorded. What is the probability that the sum is divisible by 4?

5. _____

6. A number has three distinct digits. The sum of the digits equals the product of the digits. How many three-digit numbers satisfy this condition?

6. _____

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Questions 7 and 8

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7. Simplify:

$$\frac{1}{1 - \frac{1}{1 - \frac{1}{2}}}$$

7. _____

8. A candy bar was separated into equal pieces. If one person eats $\frac{1}{4}$ of the pieces and another person eats $\frac{1}{2}$ of the remaining pieces and there are six pieces left, into how many pieces was the candy bar separated?

8. _____