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# MATHCOUNTS®

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**2016**  
■ **School Competition** ■  
**Target Round**  
**Problems 1 & 2**

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

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Problem 1	Problem 2	Scorer's Initials

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Art of Problem Solving  
NextThought

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1.            dimes     Kelly has \$12.00 in dimes and quarters. She has six more quarters than dimes. How many dimes does Kelly have?

2.   day               The height of a bean plant is measured daily. At the end of the second day of observations, it measured 1 inch in height. Thereafter, its height doubled every two days. At the end of which day will the plant measure exactly 16 inches tall?

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# MATHCOUNTS®

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2016  
■ School Competition ■  
Target Round  
Problems 3 & 4

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Name \_\_\_\_\_

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Problem 3	Problem 4	Scorer's Initials

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3.           students Koda teaches a total of 25 students in three different swimming classes. He teaches his first two classes on Friday and his third class on Saturday. There are seven students in Koda's Saturday class. What is the average number of students in Koda's Friday classes?

4.                            What is the least positive integer  $n$  such that the product of 2016 and  $n$  ends in the digits 00?

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# MATHCOUNTS®

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2016  
■ School Competition ■  
Target Round  
Problems 5 & 6

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Name \_\_\_\_\_

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Problem 5	Problem 6	Scorer's Initials

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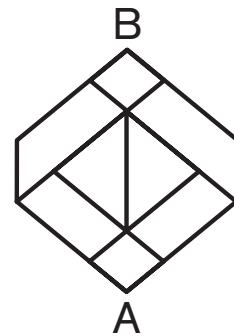
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5. \_\_\_\_\_ inches A cubic yard of sand is spread uniformly to completely cover a rectangular path that is 3 feet wide and 24 feet long. How many inches deep is the sand that covers this path? Express your answer as a mixed number.

6. \_\_\_\_\_ paths In the figure shown, how many paths are there that move only upward from A to B?



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# MATHCOUNTS®

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2016  
■ School Competition ■  
Target Round  
Problems 7 & 8

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Name \_\_\_\_\_

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Problem 7	Problem 8	Scorer's Initials

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7. \_\_\_\_\_ sets With a \$20 bill, Britt can buy 40 pencils, or 25 erasers, or 80 bookmarks, with no change left over. If Britt wants to use \$20 to make sets consisting of one pencil, one eraser, and one bookmark each, how many complete sets can he buy?

8. \_\_\_\_\_ ft<sup>2</sup> A piece of wire measuring 48 feet long is cut into two pieces of equal length. One piece is bent into an equilateral triangle and the other is bent into a circle. What is the combined area of the two shapes? Express your answer to the nearest whole number.