MATHCOUNTS®

2014
■ School Competition ■
Target Round
Problems 1 & 2

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.

Total Correct	Scorer's Initials

1. _____

On Monday, Sam ran one mile. The distance he runs each day thereafter, is 15% greater than the distance he ran the previous day. The day that the distance Sam runs first exceeds two miles is what day of the week?

2. $_____

The table shows the number of coins produced at each of the two U.S. Mint facilities in a particular year. The entry 352.80 M indicates that 352,800,000 nickels (worth $17,640,000) were produced at the Denver facility that year. In dollars, what is the total value of all coins produced that year at the facility in Philadelphia?

	Pennies	**Nickels**	**Dimes**	**Quarters**
Denver	2849.60 M	352.80 M	637.50 M	1287.60 M
Philadelphia	2569.60 M	287.76 M	413.00 M	1251.20 M

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Problems 3 & 4

Name _____

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3. _____ paths Starting with the G on top and only moving one letter at a time to one of the two closest letters in the row beneath it, how many different paths from top to bottom spell GREAT?

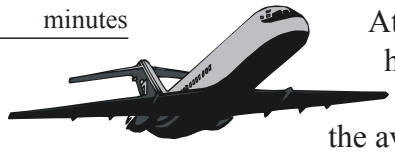
G

R R

E E E

A A A A

T T T T T

4. _____ minutes  At Podunk Regional Airport, 3% of flights are delayed by one hour, 2% are delayed by two hours, and 1% are delayed by three hours. The other 94% of flights are on time. What is the average delay, in minutes, across all flights at this airport?

MATHCOUNTS®

2014
■ School Competition ■
Target Round
Problems 5 & 6

Name _____

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5. _____ % Where Kyle lives, there is a 4.75% tax rate, so a dresser priced at $96 would cost $100.56 with tax. Where Kendra lives, a $96 item costs $102 with tax. What percent is the tax rate where Kendra lives? Express your answer to the nearest hundredth.

6. _____ A code consists of four different digits from 1 to 9, inclusive. What is the probability of selecting a code that consists of four consecutive digits but not necessarily in order? Express your answer as a common fraction.

MATHCOUNTS®

2014
■ School Competition ■
Target Round
Problems 7 & 8

Name _____

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Total Correct	Scorer's Initials

7. _____ cm^2

A jeweler can bend a piece of wire to make a circle with an area of 615.44 cm^2. What is the maximum area the jeweler could enclose with the same length of wire in the shape of a square? Express your answer to the nearest whole number.

8. _____ cm

Circle P has radius 10 cm. Two perpendicular radii are drawn, and a smaller circle is drawn tangent to both radii and the larger circle, as shown. What is the radius of the smaller circle? Express your answer as a decimal to the nearest tenth.