

2010 Orange County Math Circle All-Girls Tournament  
Grade 5 - 6 Target Round

Name:

School:

Grade:

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1. There are 80 balls in a box.  $\frac{3}{8}$  of them are red. How many red balls are there?

\_\_\_\_\_ (red balls)

2. The length of a rectangle is 48 cm. This is 4 times as long as its breadth. Find the area of the rectangle.

\_\_\_\_\_ (cm<sup>2</sup>)

3. 5 shirts and 8 pairs of shorts cost \$247.60. 3 shirts and 3 pairs of the same shorts cost \$123 altogether. Find the cost of each shirt.

\_\_\_\_\_ (dollars)

4. Given that  $8\clubsuit 2 = 8 + 9 = 17$  and  $6\clubsuit 3 = 6 + 7 + 8 = 21$ , find  $(3\clubsuit 3)\clubsuit 3$ .

\_\_\_\_\_ .

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5. A truck traveled at an average speed of 54 mph on a 135 miles journey. For the first part of the journey, it traveled at an average speed of 40 mph for  $\frac{3}{4}$  hours. Calculate its average speed for the rest of the journey.

\_\_\_\_\_ (mph)

6. In how many different ways can the letters in the word *MATH* be arranged?

\_\_\_\_\_ (ways)

7. A circle has an area of  $36\pi$  cm<sup>2</sup>. What is the area of the smallest square that can surround this circle?

\_\_\_\_\_ (cm<sup>2</sup>)

8. Shelly has rectangular blocks that are 5 cm by 4 cm by 2 cm. What is the greatest number of these blocks that can fit in a cubic box whose inner dimensions are 10 cm by 10 cm by 10 cm?

\_\_\_\_\_ (blocks)