
MATHCOUNTS®

2014
■ Chapter Competition ■
Target Round
Problems 7 & 8

Name _____

School _____

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DO SO.**

Total Correct	Scorer's Initials

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7. _____ $\frac{\text{unit}}{\text{cubes}}$ How many distinct unit cubes are there with two faces painted red, two faces painted green and two faces painted blue? Two unit cubes are considered distinct if one unit cube cannot be obtained by rotating the other.

8. _____ units^2 What is the greatest possible area of a triangle with vertices on or above the x -axis and on or below the parabola $y = -\left(x - \frac{1}{2}\right)^2 + 3$? Express your answer in simplest radical form.