Geometry Sample Problems
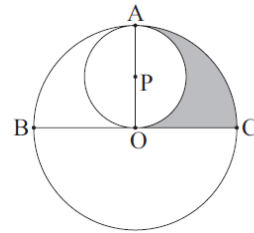
4. _____ An 8-inch by 10-inch photo is placed inside a frame with inner dimensions of 10 inches by 12 inches. What fraction of the interior area is occupied by the photo? Express your answer as a common fraction.

(Source: MATHCOUNTS 2013 Sprint Round.)

21. _____ units² Circle P is tangent to circle O at point A and to diameter BC at point O, as shown. With length 4 units, $\overline{OA}$ is a diameter of circle P and a radius of circle O. What is the area of the shaded region? Express your answer in terms of π.
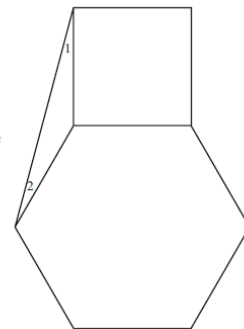

(Source: MATHCOUNTS 2013 Sprint Round.)

4. _____ revolu-tions If a tire has a radius of 8 inches, how many revolutions will it take to travel 100 yards? Express your answer to the nearest whole number.

(Source: MATHCOUNTS 2013 School Team Round.)

2. _____ degrees A square and a regular hexagon are coplanar and share a common side as shown. What is the sum of the degree measures of angles 1 and 2?

(Source: MATHCOUNTS 2013 Chapter Team Round.)