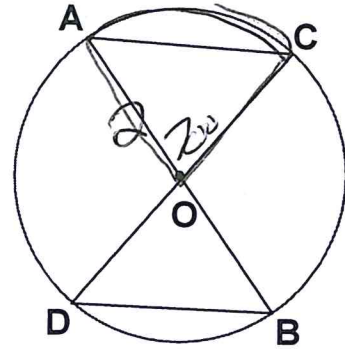Name _Schlansky_

Mr. Schlansky

Date _____

Geometry

Area of a Sector

1. In circle O, $m\angle AOC = 70$ and $\overline{AO} = 2\ in$. Find the area of sector COA to the nearest square inch.

$$A = \frac{\Theta \pi r^2}{360}$$

$$A = \frac{70\pi(2)^2}{360}$$

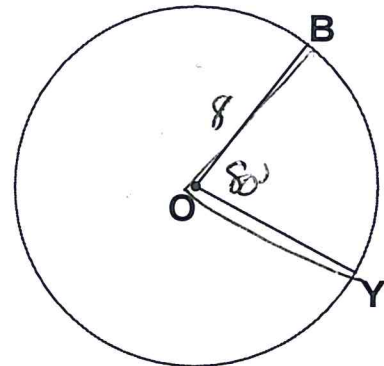$$\boxed{A = 2\ in^2}$$

2. In circle O, if $\angle BOY = 80°$ and $\overline{BO} = 8\ cm$, find the area of sector BOY in terms of π.

$$A = \frac{\Theta \pi r^2}{360} \qquad A = \frac{128\pi}{9}$$
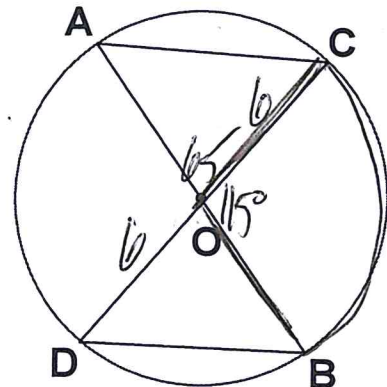
$$A = \frac{80\pi(8)^2}{360}$$

3. In circle O, $m\angle AOC = 65$ and $\overline{DO} = 6\ in$. Find the area of sector COB in terms of π.

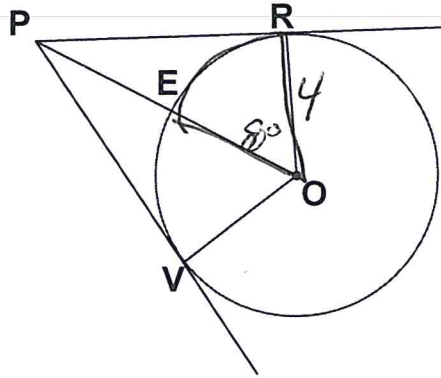$$A = \frac{\Theta \pi r^2}{360} \qquad A = \frac{23\pi}{2}$$

$$A = \frac{115\pi(6)^2}{360}$$

4. In circle O, tangents $\overline{PR}$ and $\overline{PV}$ are drawn. If $m\angle ROP = 80$ and $\overline{RO} = 4\ cm$, find the area of sector ROE to the nearest tenth of a cm.
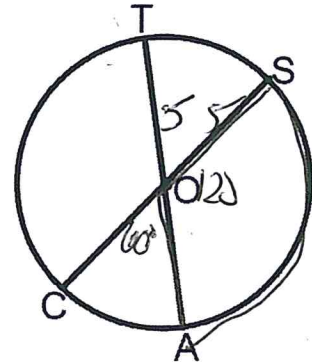
$$A = \frac{\theta\pi r^2}{360}$$

$$A = \frac{80\pi(4)^2}{360}$$

$$A = 11.2$$

5. In circle O, diameters $\overline{TA}$ and $\overline{CS}$ are drawn. If $m\angle COA = 60$ and $\overline{TA} = 10\ cm$, find the area of sector SOA to the nearest hundredth of a square centimeter.

$$A = \frac{\theta\pi r^2}{360}$$

$$A = \frac{120\pi(5)^2}{360}$$

$$A = 26.18$$

6. In circle O, diameter $\overline{SP}$ and radius $\overline{TO}$ are drawn. If $m\angle SOT = 40$ and $\overline{TO} = 2\ meters$, find the area of sector TOP in terms of π.

$$A = \frac{\theta\pi r^2}{360}$$

$$A = \frac{140\pi(2)^2}{360}$$

$$A = \frac{14\pi}{9}$$