7.9 Notes Area and Sector Area

Name: _____

Area of a Circle: πr^2

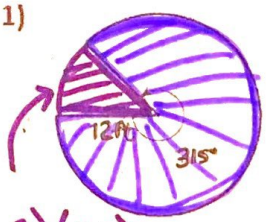
Area of Sector Proportion: $\frac{\pi r^2 \theta}{360}$

r = radius

θ = angle/arc measure

Find the area of each sector. Leave your answer in pi form (exact form).

1)



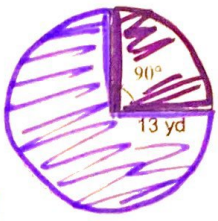
$\frac{\pi(12^2)(315)}{360} =$

$\frac{45360\pi}{360} = 126\pi \approx 395.84$

$\frac{\pi(12^2)(45)}{360} =$

$\frac{6480\pi}{360} = 18\pi \approx 56.55$

2)



$\frac{\pi(13^2)(270)}{360} =$

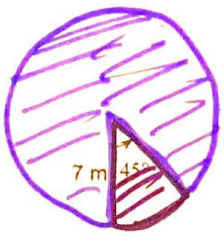
$\frac{45630\pi}{360} = 126.75\pi$ or $\frac{507}{4}\pi \approx 398.20$

$\frac{\pi(13^2)(90)}{360} = \frac{15210\pi}{360} =$

42.25π or $\frac{169}{4}\pi \approx 132.73$

Find the area of each sector. Round your answers to the nearest tenth.

3)



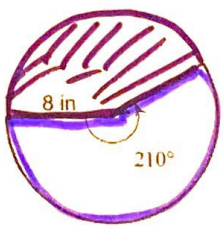
$\frac{\pi(7^2)(45)}{360} =$

$\frac{2205\pi}{360} = 6.125\pi$ or $\frac{49}{8}\pi \approx 19.24$

$\frac{\pi(7^2)(315)}{360} =$

$\frac{15435\pi}{360} = 42.875\pi$ or $\frac{343}{8}\pi \approx 134.70$

4)



$\frac{\pi(8^2)(150)}{360} =$

$\frac{9600\pi}{360} = \frac{80}{3}\pi \approx 83.78$

$\frac{\pi(8^2)(210)}{360} =$

$\frac{13440\pi}{360} = \frac{112}{3}\pi \approx 117.29$

EX: Find the radius of the circle:

Area: 196.35

$$\text{Sector Area} = \frac{\pi r^2 \theta}{360}$$

$$196.35 = \frac{\pi (r^2)(225)}{360} \cdot 360$$

$$\frac{70686}{(225\pi)} = \frac{\pi (r^2)(225)}{(225\pi)}$$

$$\sqrt{100} = \sqrt{r^2}$$

$$\boxed{r = 10}$$