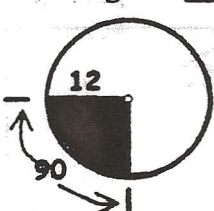
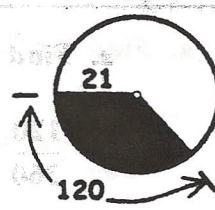
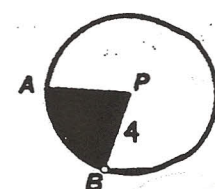
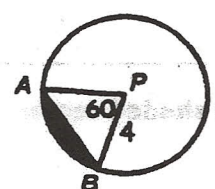
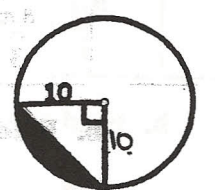
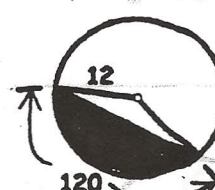


Geometry Worksheet
Arc Length, Sector Area, Segment Area

Name _____
Date _____ Period _____

Find the shaded area. On problems 1-3, find the arc length for the shaded sector also.

<p>1. $A_{\text{sector}} = 36\pi u^2$ arc length = $6\pi u$</p> 	<p>2. $A_{\text{sector}} = 147\pi u^2$ arc length = $14\pi u$</p> 	<p>3. $A_{\text{sector}} = \frac{8}{3}\pi u^2$ arc length = $\frac{4}{3}\pi u$ Given: $m\angle APB = 60$</p> 
<p>4. $(\frac{8}{3}\pi - 4\sqrt{3})u^2$</p> 	<p>5. $(25\pi - 50)u^2$</p> 	<p>6. $(48\pi - 36\sqrt{3})u^2$</p> 

Big Δ + Little Δ - Med Δ

7. If $\angle C = 2\angle A$. What fraction of the circle is shaded? $\frac{1}{3}$

Let $6x = AC$
 $4x = BC$
 $2x = AB$

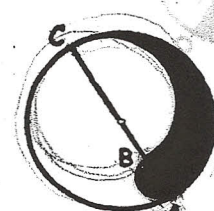
shaded = Big Δ - Med Δ + Little Δ

$= \frac{1}{2}(3x)^2\pi - \frac{1}{2}(2x)^2\pi + \frac{1}{2}(x)^2\pi$

$= \frac{9}{2}x^2\pi - 2x^2\pi + \frac{1}{2}x^2\pi = 3x^2\pi$

Circle = $(3x)^2\pi = 9x^2\pi$

shaded = $\frac{3x^2\pi}{9x^2\pi} = \frac{1}{3}$



8. Find the degree measure of the arc of a sector with area 36π if the area of the circle is 144π .

$$\frac{x}{360} \times 144\pi = 36\pi$$

$$\frac{x}{360} = \frac{36}{144} = \frac{1}{4}$$

$$x = \frac{1}{4} \times 360$$

$$x = 90^\circ$$

9. Two circles have radii 3 cm. and 5 cm. Find the ratio of their areas

$$\frac{9\pi \text{ cm}^2}{25\pi \text{ cm}^2}$$

$$\frac{9}{25}$$

10. The areas of two circles are in the ratio 16 to 9. Find the ratio of their radii.

$$\frac{4}{3}$$

$$\sqrt{\frac{\pi r^2}{\pi r^2}} = \sqrt{\frac{16}{9}}$$