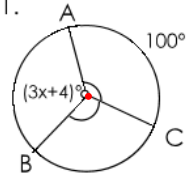
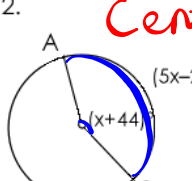
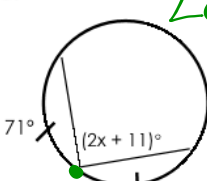
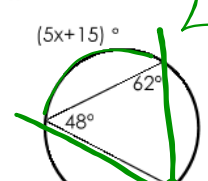
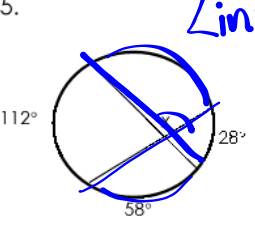
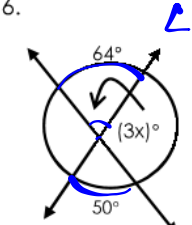
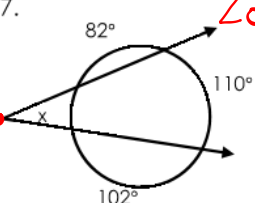
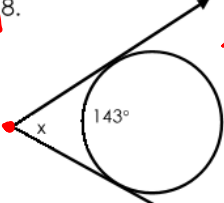
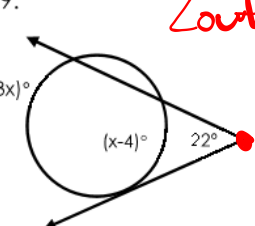
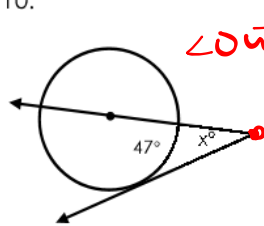
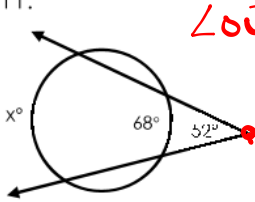
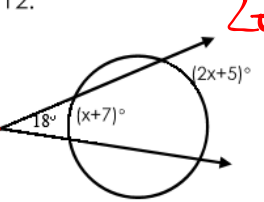


<p>1.  Central \angle</p>	<p>2.  Central \angle</p>
<p>3.  $\angle_{in} = \frac{arc}{2}$</p>	<p>4.  $\angle_{in} = \frac{arc}{2}$</p>
<p>5.  $\angle_{inside} = \frac{arc + arc}{2}$</p>	<p>6.  $\angle_{inside} = \frac{arc + arc}{2}$</p>
<p>7.  $\angle_{out} = \frac{BIG - small}{2}$</p>	<p>8.  $\angle_{out} = \frac{BIG - small}{2}$</p>
<p>9.  $\angle_{out} = \frac{BIG - small}{2}$</p>	<p>10.  $\angle_{out} = \frac{BIG - small}{2}$</p>
<p>11.  $\angle_{out} = \frac{BIG - small}{2}$</p>	<p>12.  $\angle_{out} = \frac{BIG - small}{2}$</p>

7.

$\angle_{out} = \frac{BIG - small}{2}$

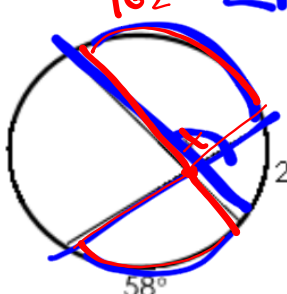
$x = \frac{110 - 66}{2}$

$x = \frac{44}{2}$

$x = 22^\circ$

$$\begin{array}{r}
 360 \\
 - 82 \\
 - 110 \\
 - 102 \\
 \hline
 66
 \end{array}$$

5.



$L_{\text{inside}} = \frac{\text{arc} + \text{arc}}{2}$

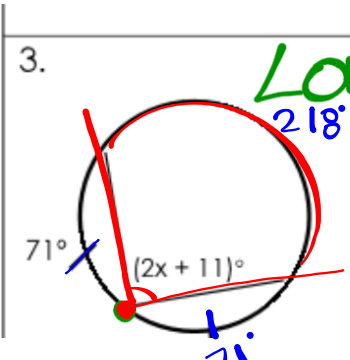
$X = \frac{162 + 58}{2}$

$= \frac{220}{2}$

$X = 110^\circ$

$$\begin{array}{r} 360 \\ - 112 \\ - 58 \\ - 28 \\ \hline 162 \end{array}$$

3.



218

71°

$(2x + 11)^\circ$

r

$Lon = \frac{arc}{2}$

$Lon = \frac{arc}{2}$

$2x + 11 = \frac{218}{2}$

$2x + 11 = 109$

$\frac{2x}{2} = \frac{98}{2}$

$x = 49$

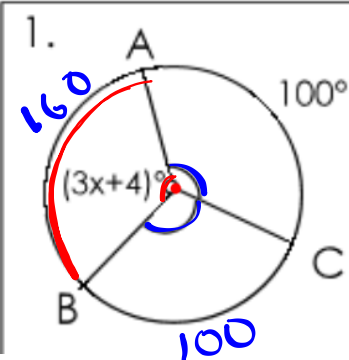
360

$- 71$

$- 71$

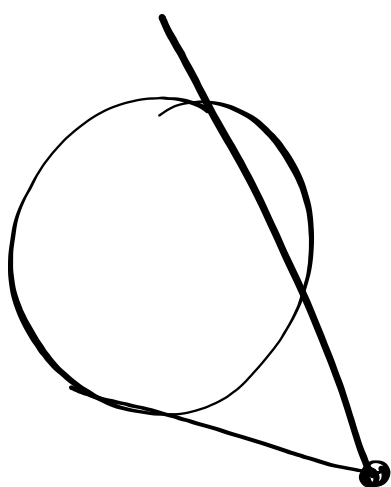
$\hline 218$

1.



Central $\angle = \text{arc}$

$$3x + 4 = 160$$
$$\begin{array}{r} -4 \quad -4 \\ \hline 3x = 156 \end{array}$$
$$\frac{3x}{3} = \frac{156}{3}$$
$$x = 52$$

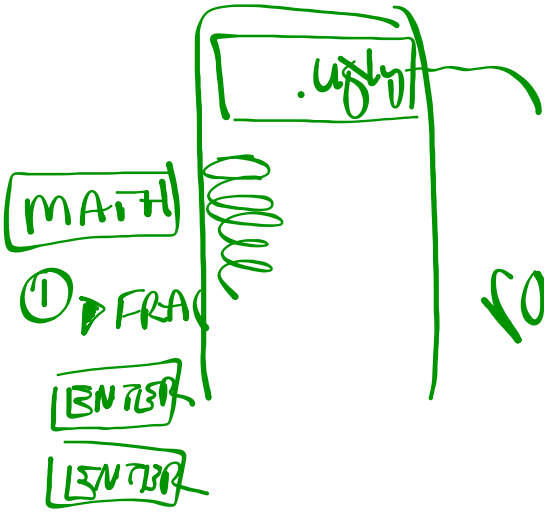


$\angle_{\text{central}} \quad \angle_{\text{central}} = \widehat{\text{arc}}$
 $\angle_{\text{ON}} \quad \angle_{\text{ON}} = \frac{\widehat{\text{arc}}}{2}$
 $\angle_{\text{out}} \quad \angle_{\text{out}} = \frac{BK_{\text{small}}}{2}$
 $\angle_{\text{inside}} \quad \angle_{\text{inside}} = \frac{\widehat{\text{arc}} + \widehat{\text{arc}}}{2}$



Good morning!

1. "Here"
2. Quiz opens today!
3. Notes on Sector Area
4. Practice, homework is on DeltaMath:)
5. All Angles Review for Quiz



rgodlesby.weebly.com

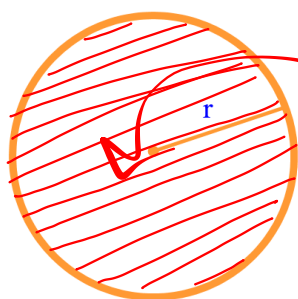




**Area of
Circles
& Sectors**

Area

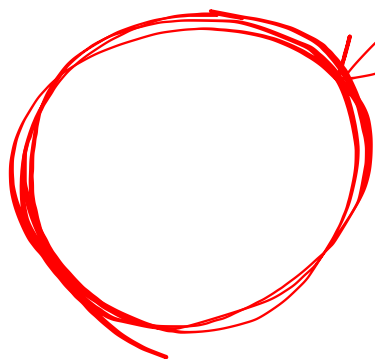
The amount of space occupied.



"pie filling"

$$A = \pi r^2$$

"square units"



"pie crust"

$$C = 2\pi r$$

"linear units"

Find the **EXACT** area.

1. $r = 29$ feet

• "save pi for dessert!"

$$A = \pi r^2$$
$$= \pi (29)^2 \text{ or } 29 * 29 * \pi$$

2. $d = 44$ miles

$$A = 841\pi \text{ ft}^2$$

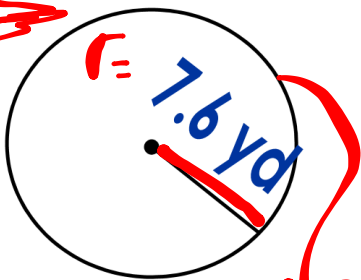
$r = 22$ mi

$$A = \pi r^2$$
$$= \pi (22)^2$$

$$A = 484\pi \text{ mi}^2$$

Find the area. Round to the nearest tenths.

~~181.458~~
181.5

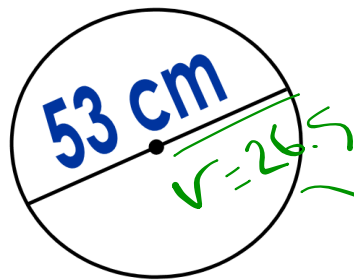


$$A = \pi r^2$$

$$= \pi (7.6)^2$$

$$= \pi * 7.6 * 7.6$$

$$A = 181.5 \text{ yd}^2$$



$$A = \pi r^2$$

$$A = \pi (26.5)^2$$

$$= \pi * 26.5 * 26.5$$

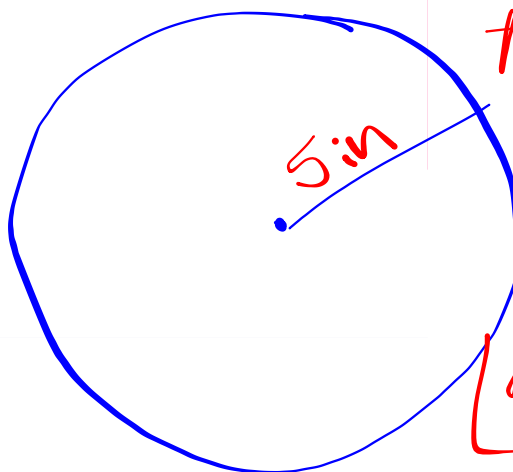
$$A = 702.3 \text{ cm}^2$$

$$A = 2206.2 \text{ cm}^2$$

1. Draw picture ✓
2. Highlight information ✓
3. Set up equation/formula ✓
4. Solve for the QUESTION

Another Example!

If $\odot S$ has a diameter of 10 inches, find the area of the circle to the nearest hundredths.



$$r = 5 \text{ in}$$

$$A = \pi r^2$$

$$A = \pi (5)^2$$

$$A = \pi * 5 * 5$$

$$A = 78.53 \text{ in}^2$$

Sector

the region bounded by two radii of the circle
and their intercepted arc.



Area of a Sector

$$\text{Sector Area} = \frac{\theta}{360} (\text{Total Area})$$

Central angle

πr^2

7 inch slice so that neither slice

MATH JUST GOT

6 in. 60° \$1.50

7 in. 45° \$1.70

IMPORTANT

$$A = \pi (5)^2$$

$$A = 25\pi$$

$$r = 5 \text{ in}$$

$$10 \text{ in}$$

$$r = 8 \text{ in}$$

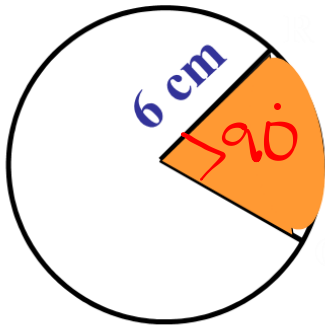
$$16 \text{ in}$$

$$A = \pi (8)^2$$

$$A = 64\pi$$

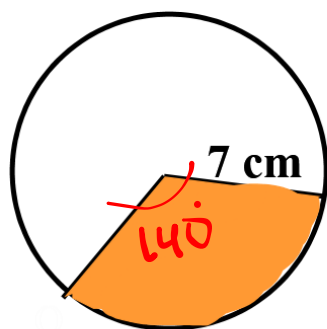
Example

Find the area of the sector to the nearest hundredths.



$$\begin{aligned}\theta &= 90^\circ \\ r &= 6 \\ SA &= \frac{\theta}{360} (\pi r^2) \\ &= \frac{90}{360} (\pi (6)^2) \\ &= 90 * \pi * 6 * 6 \div 360\end{aligned}$$

$$SA = 28.27 \text{ cm}^2$$

ExampleFind the exact area of the sector.

$$\theta = 140^\circ$$

$$r = 7 \text{ cm}$$

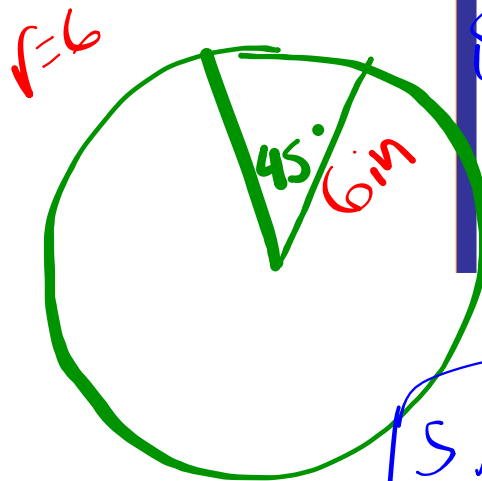
$$SA = \frac{\theta}{360} (\pi r^2)$$

$$= \frac{140}{360} * 7 * 7 * \pi$$

$$SA = \frac{343}{18} \pi \text{ cm}^2$$

Example

Find the area of a sector with a central angle of 45° if the diameter of the circle is 12 inches. Round to the nearest hundredths.

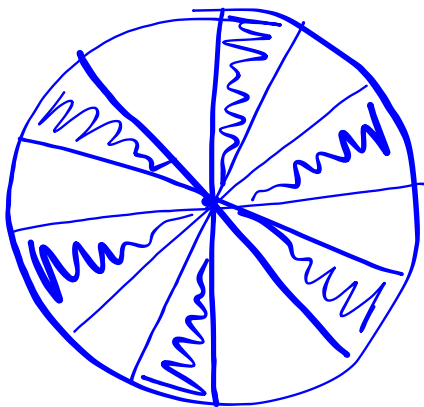


$$SA = \frac{\theta}{360} (\pi r^2)$$
$$= \frac{45}{360} * \pi * 6 * 6$$

$$SA = 14.14 \text{ in}^2$$

Example

A spinner is divided into 12 equal sections and the radius of the spinner is 4 inches. Every other section is shaded. Find the exact total area of the shaded region on the spinner.



$$r = 4 \text{ in}$$

$$SA = \frac{\theta}{360} (\pi r^2)$$

$$\frac{1}{2} (\pi (4)^2)$$

$$SA = 8\pi \text{ in}^2$$

$$\frac{360}{12} = 30$$

$$\frac{180}{360} = \frac{1}{2}$$

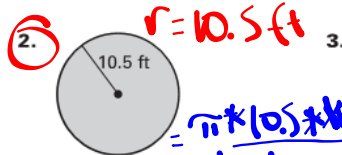
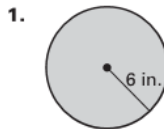
$$\frac{1}{2} (\pi (4)^2) = 2\pi$$

Name _____

Date _____

LESSON 11.2 Practice
For use with the lesson "Areas of Circles and Sectors"

Find the exact area of the circle. Then find the area to the nearest hundredth.



$r = 10.5 \text{ ft}$
 $A = \pi r^2 = \pi (10.5)^2$
 $= 346.36 \text{ ft}^2$ rounded
 Exact
 $= 110.25 \pi = \frac{441}{4} \pi \text{ ft}^2$

Find the indicated measure.

4. The area of a circle is 173 square inches. Find the radius.

$A = \pi r^2$
 $173 = \pi r^2$

$173 = \pi r^2$
 $\sqrt{r^2} = \sqrt{\frac{173}{\pi}}$
 $r = 7.42 \text{ in}$

5. The area of a circle is 290 square meters. Find the radius.

6. The area of a circle is 654 square centimeters. Find the diameter.

- ① Radius ✓
- ② Diameter ✓

$A = \pi r^2$

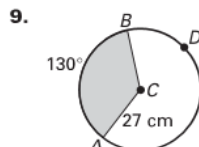
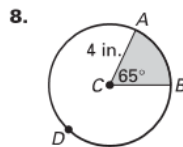
$\sqrt{\frac{A}{\pi}} = \sqrt{r^2}$

$r = \sqrt{\frac{A}{\pi}} = \sqrt{\frac{654}{\pi}}$

$r = 14.43$
 $D = 28.86 \text{ cm}$

7. The area of a circle is 528 square feet. Find the diameter.

Find the areas of the sectors formed by $\angle ACB$.



10.

$SA = \frac{\theta}{360} (\pi r^2)$
 $151 = \frac{\theta}{360} (\pi \cdot 18^2)$

$\frac{360}{151} = \frac{\theta}{\pi \cdot 18^2}$

$SA = 426.94 \text{ m}^2$

Name _____

Date _____

LESSON 11.2 Practice *continued*
For use with the lesson "Areas of Circles and Sectors"

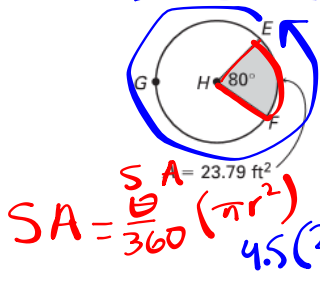
$$\frac{80x}{90} = 360$$

$$\frac{80x}{80} = \frac{360 \cdot 80}{80}$$

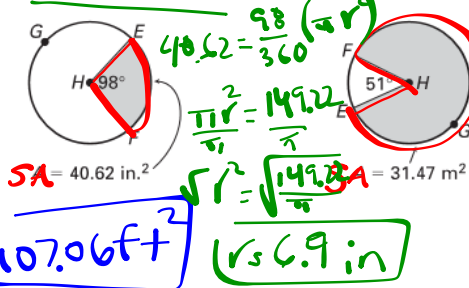
$$x = 4.5$$

Use the diagram to find the indicated measure.

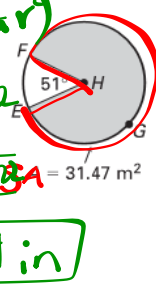
11. Find the area of $\odot H$.



12. Find the radius of $\odot H$.



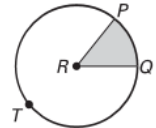
13. Find the diameter of $\odot H$.



The area of $\odot R$ is 295.52 square inches. The area of sector PRQ is 55 square inches. Find the indicated measure.

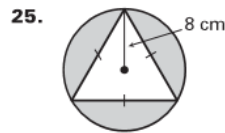
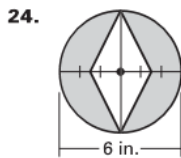
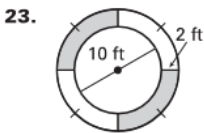
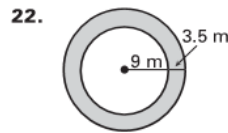
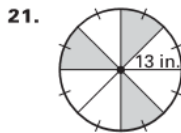
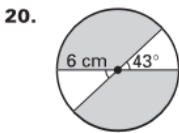
14. Radius of $\odot R$ 15. Circumference of $\odot R$

16. $m\widehat{PQ}$ 17. Length of \widehat{PQ}



18. Perimeter of shaded region 19. Perimeter of unshaded region

Find the area of the shaded region.



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