

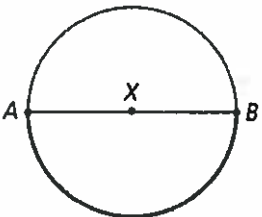
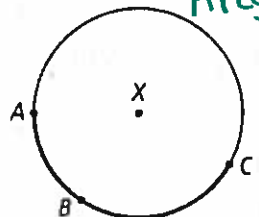
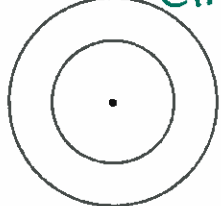
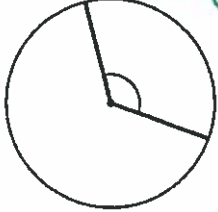
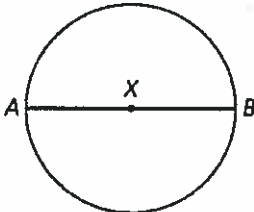
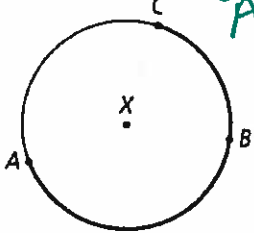
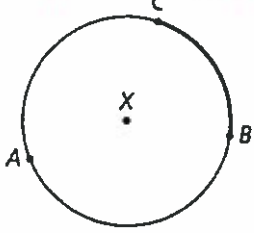
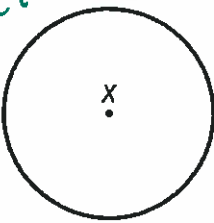
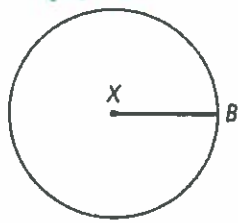
11-1 Additional Vocabulary Support

Circles and Arcs

Concept List

adjacent arcs	central angle	circumference
concentric circles	diameter	major arc
minor arc	radius	semicircle

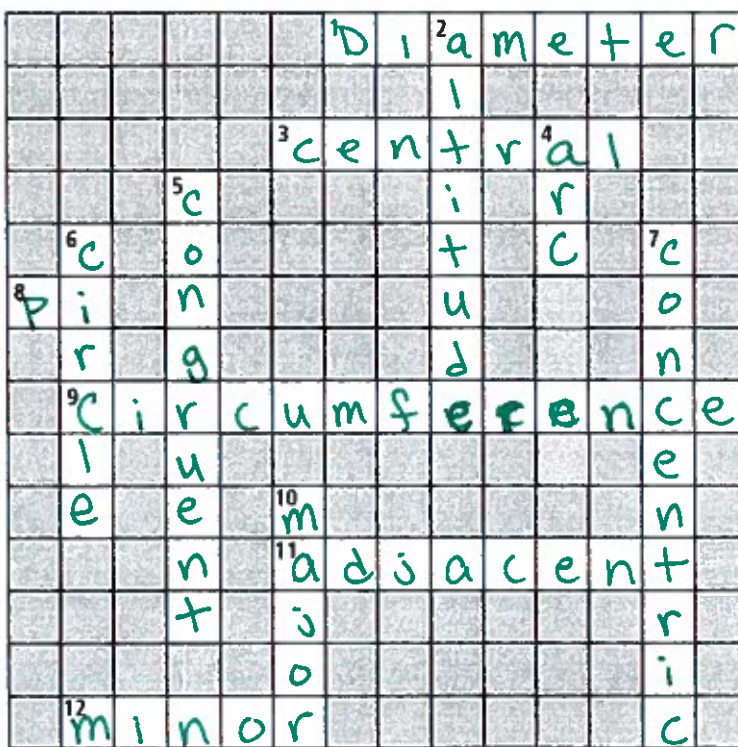
Choose the concept from the list above that best represents the item in each box.

<p>1. \widehat{AB} <i>semicircle</i></p> 	<p>2. \widehat{AB} and \widehat{BC} <i>Adjacent Arcs</i></p> 	<p>3. <i>Concentric Circles</i></p> 
<p>4. <i>Central Angle</i></p> 	<p>5. <i>Diameter</i></p> 	<p>6. \widehat{ABC} <i>Major Arc</i></p> 
<p>7. \widehat{CB} <i>Minor Arc</i></p> 	<p>8. <i>Circumference</i></p> 	<p>9. <i>Radius</i></p> 

11-1 Puzzle: Crossword

Circles and Arcs

All of the clues below involve vocabulary you have learned earlier in the course. Write each answer in the crossword puzzle below. Any numerical answers should be written in word form.



Across

- The segment that contains the center of a circle and has both endpoints on the circle is called the ?.
- A(n) ? angle is one whose vertex is the center of a circle.
- The ratio of the circumference of a circle to its diameter is known as ?.
- The ? is the distance around a circle.
- ? arcs are arcs of the same circle that have exactly one point in common.
- An arc that is smaller than a semicircle is called a(n) ? arc.

Down

- The ? of a triangle is the segment drawn from a vertex perpendicular to the line containing the opposite side.
- A section of the circumference of a circle between two points on the circle is an ?.
- Arcs that have the same measure and are in the same circle are called ? arcs.
- A(n) ? is the set of all points equidistant from a given point.
- ? circles are coplanar circles that have the same center.
- Arcs named with three points are ? arcs.

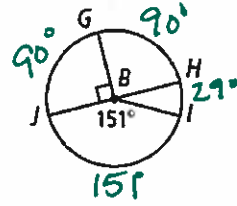
11/1-3 Practice Arc Length, Radian, Sector Area Form G

Circles and Arcs

Degrees!

Find the measure of each arc in $\odot B$.

1. $\widehat{GJ} = 90^\circ$
2. $\widehat{HI} = 29^\circ$
3. $\widehat{HIJ} = 180^\circ$
4. $\widehat{GJI} = 241^\circ$
5. $\widehat{GHJ} = 270^\circ$
6. $\widehat{GJH} = 270^\circ$



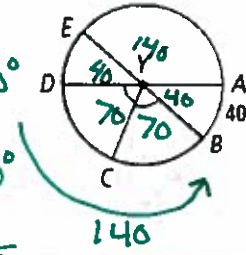
$$\frac{\angle}{360} = \frac{\text{Arc Length}}{\text{Circumference}}$$

Find the length of each darkened arc. Leave your answer in terms of π .

7.
$$\frac{120}{360} = \frac{x}{18\pi} \Rightarrow x = 6\pi \text{ in}$$
8.
$$\frac{150}{360} = \frac{x}{18\pi} \Rightarrow x = 7.5\pi \text{ ft}$$
9.
$$\frac{45}{360} = \frac{x}{40\pi} \Rightarrow x = 35\pi \text{ m}$$
10.
$$\frac{270}{360} = \frac{x}{24\pi} \Rightarrow x = 18\pi \text{ in}$$
11.
$$\frac{180}{360} = \frac{x}{16.4\pi} \Rightarrow x = 8.2\pi \text{ m}$$
12.
$$\frac{60}{360} = \frac{x}{30\pi} \Rightarrow x = 5\pi \text{ ft}$$

Find each indicated measure for $\odot Y$.

13. $m\angle EYD = 40^\circ$
14. $m\widehat{EAB} = 180^\circ$
15. $m\widehat{DB} = 140^\circ$
16. $m\angle DYC = 70^\circ$
17. $m\widehat{AEC} = 250^\circ$
18. $m\widehat{BDA} = 320^\circ$



19. Kiley's in-line skate wheels have a 43-mm diameter. How many meters will Kiley travel after 5000 revolutions of the wheels on her in-line skates? Round your answer to the nearest tenth of a meter.

$$C = 43\pi \quad 5000(43\pi) = 675442.4 \text{ m}$$

20. It is 5:00. What is the measure of the minor arc formed by the hands of an analog clock?

$$150^\circ$$

Less than 180



$$360 \div 12 = 30^\circ \text{ each } \# \\ 5(30) = 150^\circ$$

Algebra Find the value of each variable.

21.
$$2a + 24 + a = 180 \\ 3a + 24 = 180 \\ 3a = 156 \\ a = 52$$

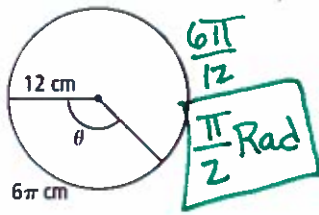
22.
$$\text{Add All to } 360 \\ (20a - 30) + (10a + 2) + (2a + 4) = 360 \\ 32a - 24 = 360 \\ 32a = 384 \\ a = 12$$

23.
$$5x + 10x + 80 = 360 \\ 10x + 80 = 360 \\ 10x = 280 \\ x = 28$$

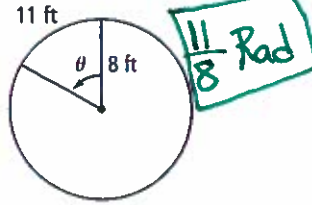
The radius and arc length are given. Find the **radian measure** of the central angle.

$\frac{\text{Arc length}}{\text{radius}} = \text{Radian measure}$
units is Rad

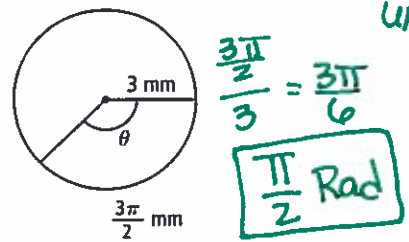
24.



25.

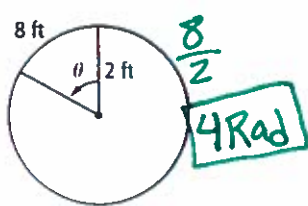


26.

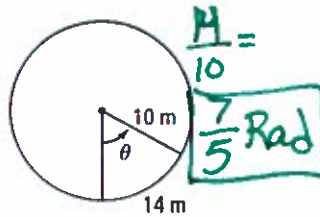


The radius and arc length are given. Find the radian measure of the central angle.

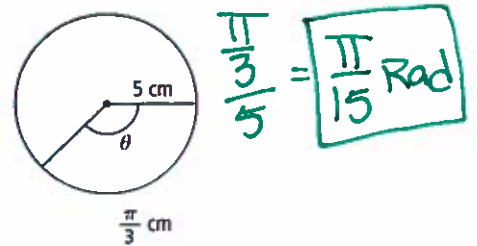
27.



28.



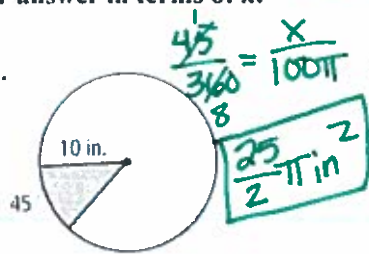
29.



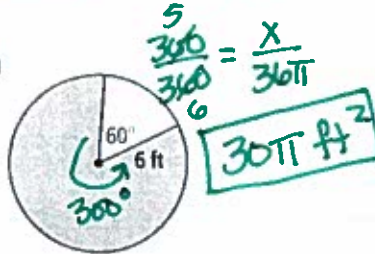
Find the area of each shaded **sector of a circle**. Leave your answer in terms of π .

$\frac{\angle}{360} = \frac{\text{sector Area}}{\text{Area}}$

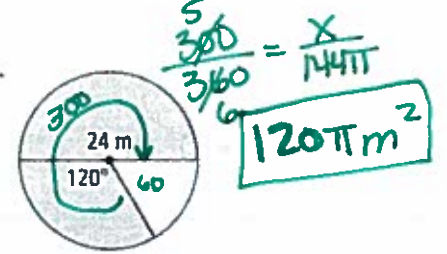
30.



31.



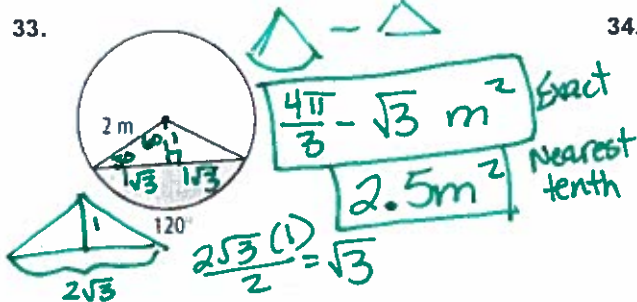
32.



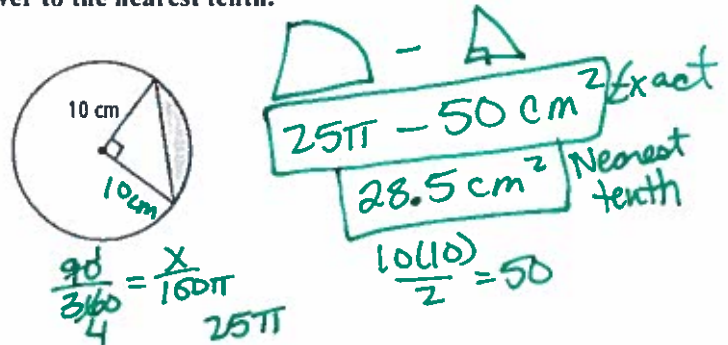
Find the area of each shaded segment. Round your answer to the nearest tenth.

$\frac{120}{360} = \frac{x}{4\pi}$
 $\frac{4\pi}{3}$

33.

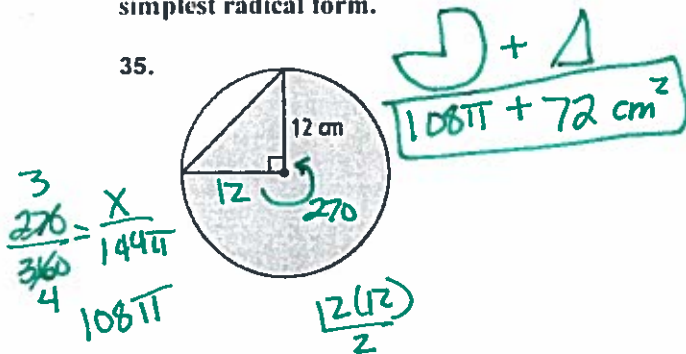


34.



Find the area of the shaded region. Leave your answer in terms of π and in simplest radical form.

35.



36.

