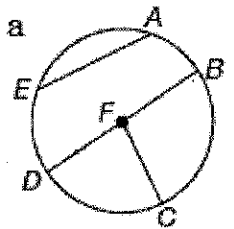


Segments in Circles A circle consists of all points in a plane that are a given distance, called the **radius**, from a given point called the **center**.

A segment or line can intersect a circle in several ways.

- A segment with endpoints that are at the center and on the circle is a **radius**.
- A segment with endpoints on the circle is a **chord**.
- A chord that passes through the circle's center and made up of collinear radii is a **diameter**.



chord: $\overline{AE}, \overline{BD}$
 radius: $\overline{FB}, \overline{FC}, \overline{FD}$
 diameter: \overline{BD}

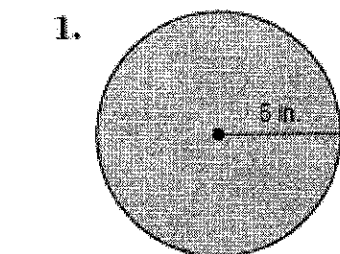
This is $\odot F$

A. Read the information above, and the example for #1 and answer #2 and #3 completely

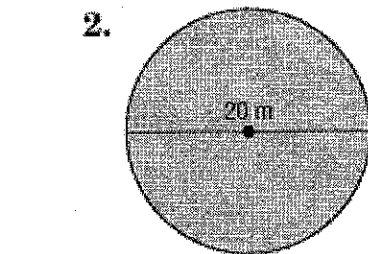
<p>1a. Name the circle. $\odot O$</p> <p>1b. Name all radii (4) $\overline{AO}, \overline{OB}, \overline{OC}, \overline{OD}$</p> <p>1c. Name all chords (2) $\overline{AB}, \overline{CD}$</p> <p>1d. If $AB = 24$, find OD $OD = 12$</p>	<p>2a. Name the circle. $\odot R$</p> <p>2b. Name radii (4) $\overline{AR}, \overline{XR}, \overline{RY}, \overline{BR}$</p> <p>2c. Name chords (4). $\overline{AX}, \overline{BY}, \overline{AB}, \overline{XY}$</p> <p>2d. If $AB = 30$, Find RY $RY = 15$</p>	<p>3a. Name the circle. $\odot L$</p> <p>3b. Name radii (3) $\overline{LR}, \overline{LT}, \overline{LW}$</p> <p>3c. Name chords (3). $\overline{RS}, \overline{ST}, \overline{RT}$</p> <p>3d. If $LW = 12$, Find RT $RT = 24$</p>
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B. Find the areas and circumferences of each circle. Leave your answer in terms of pi. Show your work.

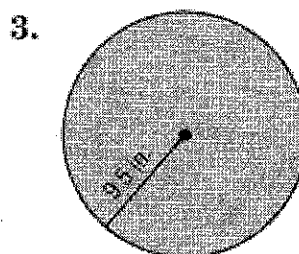
<p>Area of a Circle</p>	<p>Area of space inside a circle</p> $A = \pi r^2$	<p>Circumference of a circle</p>	<p>Distance around a circle</p> $C = \pi d \text{ or } C = 2\pi r$
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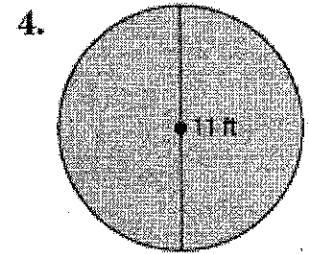
$A = \pi(5)^2$
 $A = 25\pi \text{ in}^2$
 $C = 2\pi(5)$
 $C = 10\pi \text{ in}$



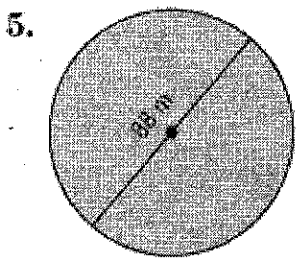
$A = \pi(10)^2$
 $A = 100\pi \text{ m}^2$
 $C = 20\pi \text{ m}$



$A = \pi(9.5)^2$
 $A = 90.25\pi \text{ in}^2$
 $C = 2\pi(9.5)$
 $C = 19\pi \text{ in}$



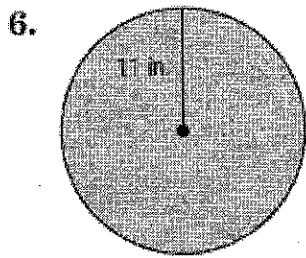
$A = \pi(5.5)^2$
 $A = 30.25\pi \text{ ft}^2$
 $C = 11\pi \text{ ft}$



$$A = \pi (44)^2$$

$$A = 1936\pi \text{ m}^2$$

$$C = 88\text{ m}$$

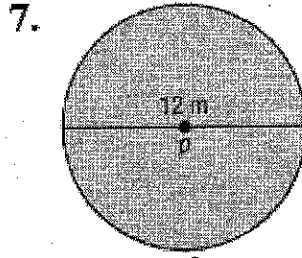


$$A = \pi (11)^2$$

$$A = 121\pi \text{ m}^2$$

$$C = 2\pi (11)$$

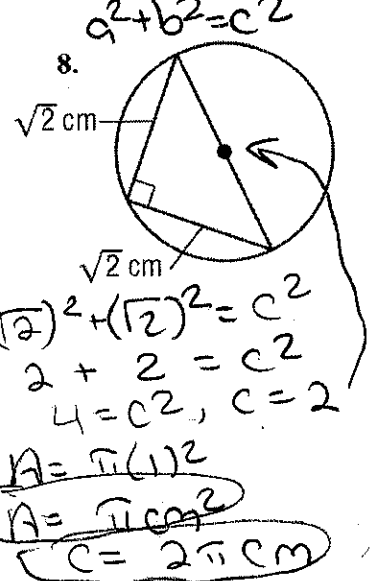
$$C = 22\pi \text{ m}$$



$$A = \pi (12)^2$$

$$A = 144\pi \text{ m}^2$$

$$C = 12\pi \text{ m}$$



$$a^2 + b^2 = c^2$$

$$(\sqrt{2})^2 + (\sqrt{2})^2 = c^2$$

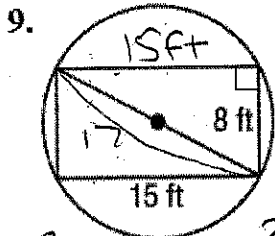
$$2 + 2 = c^2$$

$$4 = c^2, c = 2$$

$$A = \pi (1)^2$$

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

$$C = 2\pi \text{ cm}$$



$$8^2 + 15^2 = c^2$$

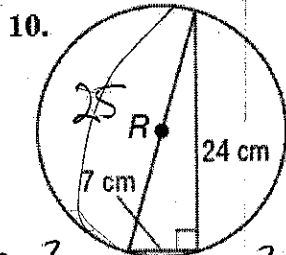
$$289 = c^2$$

$$17 = c$$

$$A = \pi (8.5)^2$$

$$A = 72.25\pi \text{ ft}^2$$

$$C = 17\pi \text{ ft}$$



$$7^2 + 24^2 = c^2$$

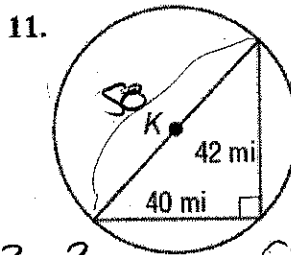
$$625 = c^2$$

$$25 = c$$

$$A = \pi (12.5)^2$$

$$A = 156.25\pi \text{ cm}^2$$

$$C = 25\text{ cm}$$



$$40^2 + 42^2 = c^2$$

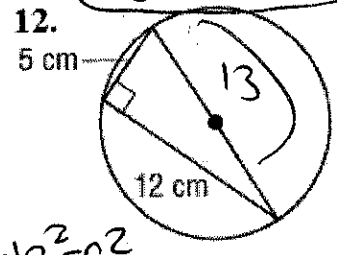
$$3364 = c^2$$

$$58 = c$$

$$A = \pi (29)^2$$

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

$$C = 58\pi \text{ mi}$$



$$5^2 + 12^2 = c^2$$

$$169 = c^2$$

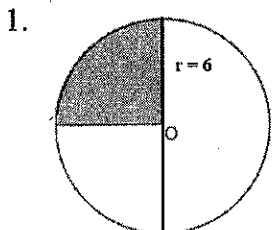
$$13 = c$$

$$A = \pi (6.5)^2$$

$$A = 42.25\pi \text{ cm}^2$$

$$C = 13\pi \text{ cm}$$

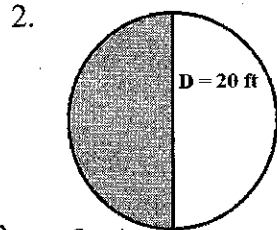
C. Find the area of the grayed part of the circle (this is called a sector). Find out what fraction of the circle is grayed out, then find the area of the whole circle. Multiply the area of the whole circle by the fraction and you will have your answer. Continue leaving your answers in terms of pi. Show your work.



$$A = \pi (6)^2$$

$$A = 36\pi$$

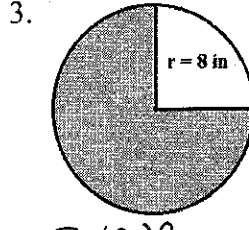
$$\text{Gray } A = 9\pi$$



$$A = \pi (10)^2$$

$$A = 100\pi$$

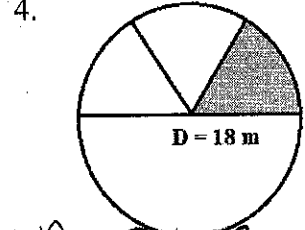
$$\text{Gray } A = 50\pi \text{ ft}^2$$



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

$$A = 64\pi$$

$$\text{GA} = 48\pi \text{ in}^2$$

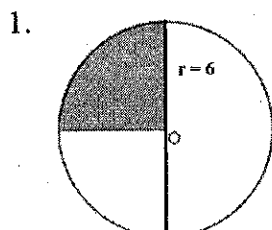


$$A = \pi (9)^2$$

$$A = 81\pi$$

$$\text{GA} = 13.5\pi \text{ m}^2$$

D. Find the circumference of the grayed part of the circle (this called length of the arc). Find out what fraction of the circle is grayed out, then find the circumference of the whole circle. Multiply the circumference of the whole circle by the fraction and you will have your answer. Continue leaving your answers in terms of pi. Show your work.

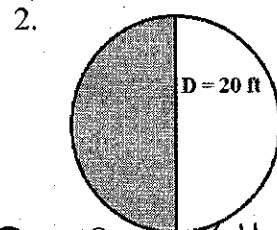


$$C = 2\pi (6)$$

$$C = 12\pi$$

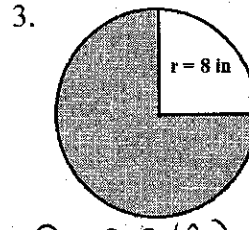
$$C = 12\pi \cdot \frac{1}{4}$$

$$C = 3\pi$$



$$C = 20\pi$$

$$C = 10\pi \text{ ft}$$

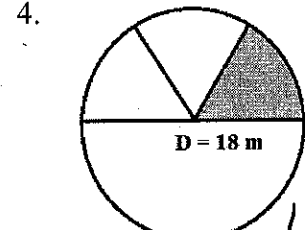


$$C = 2\pi (8)$$

$$C = 16\pi$$

$$C = 16\pi \cdot \frac{3}{4}$$

$$C = 12\pi \text{ in}$$



$$C = 18\pi$$

$$C = 18\pi \cdot \frac{1}{6}$$

$$C = 3\pi \text{ m}$$