

**2 - 7**

**Circumference and  
Area of a Circle**

circle: set of all points in a plane  
that are a fixed distance from a  
given point

center: that point

radius: the fixed distance

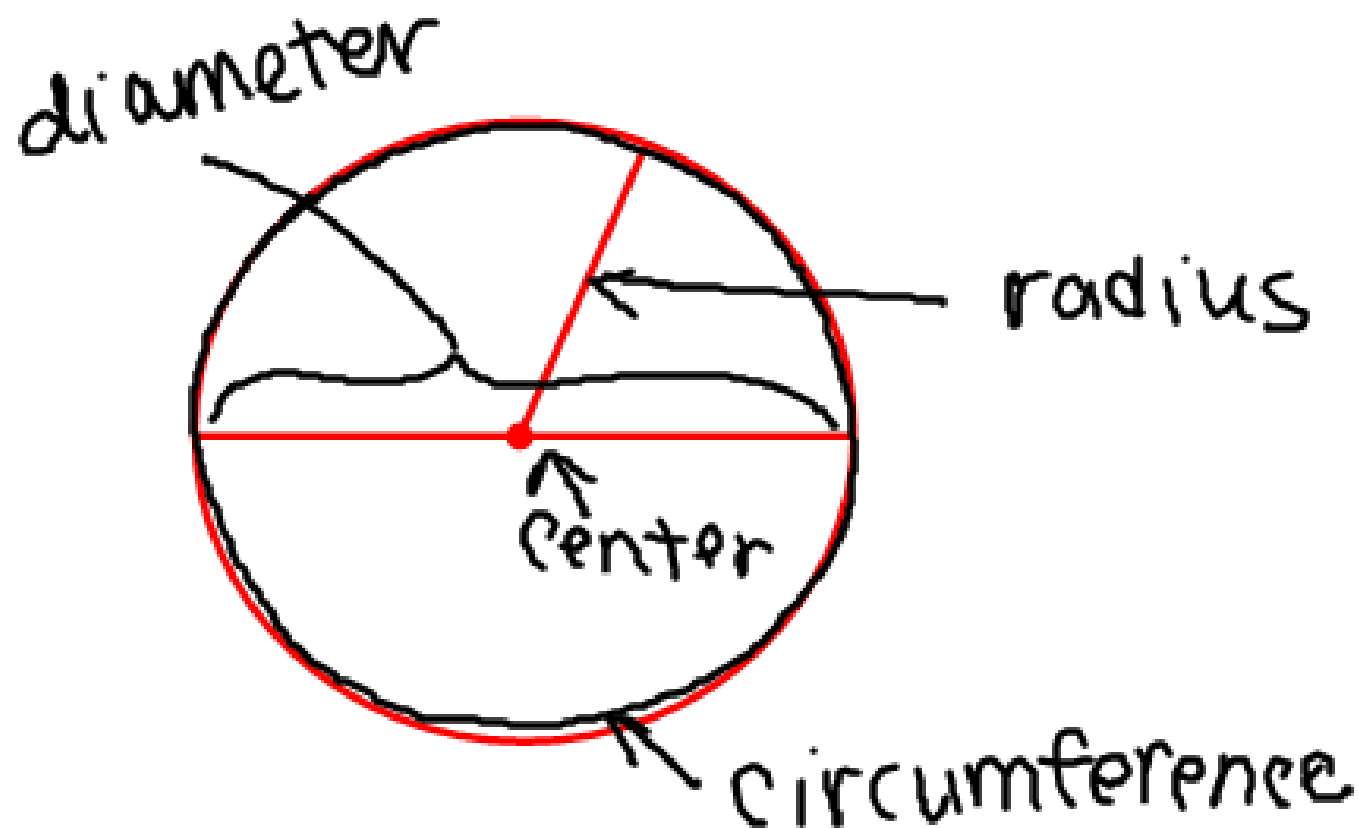
diameter:  $2 \times$  radius  
passes through center



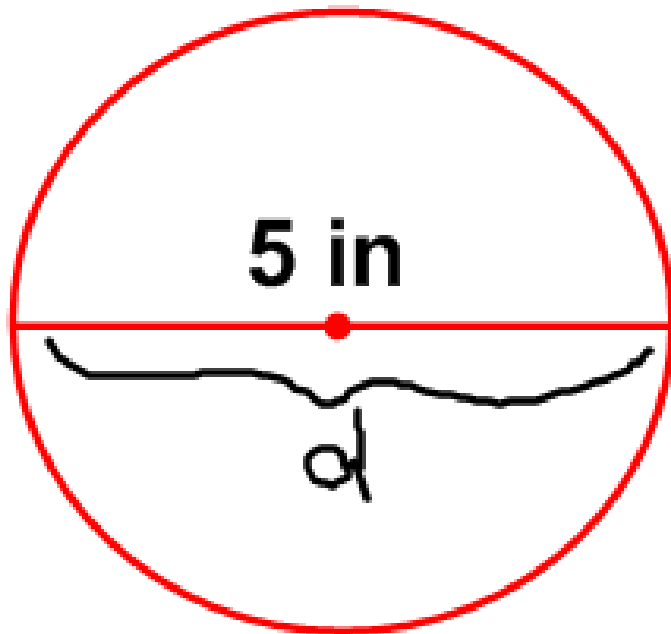
circumference: distance  
around the circle

$$C = 2\pi r$$

$$C = \pi d$$



**Ex: Find the circumference.**



$$d = 5$$

$$r = 2.5$$

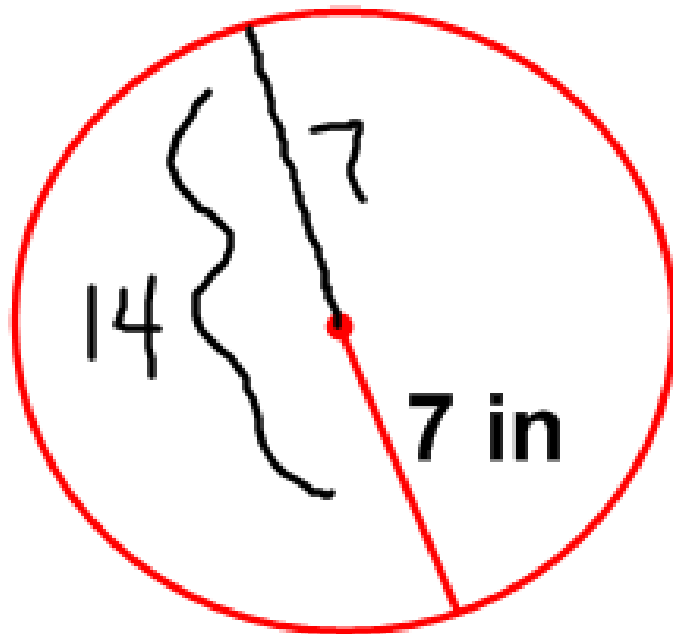
$$C = \pi d$$

$$C = \pi \cdot 5$$

$$C = 15.7 \text{ in}$$



**Ex: Find the circumference.**



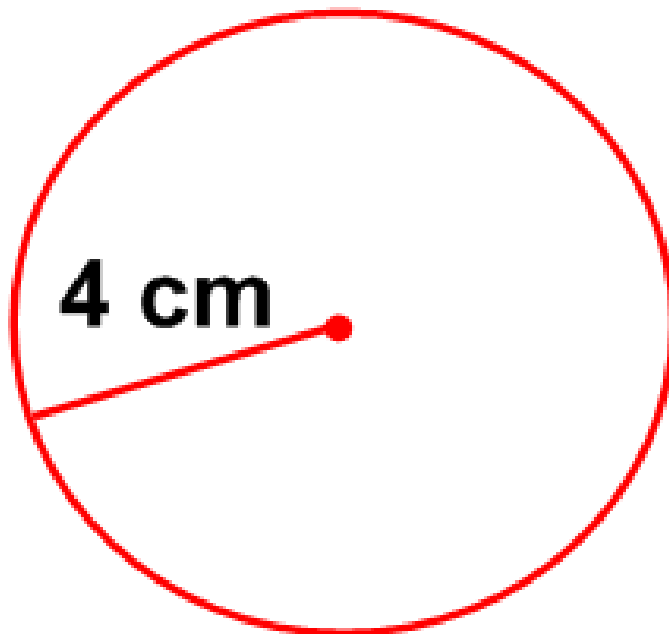
$$\begin{aligned}C &= \pi \cdot d \\&= \pi \cdot 14 \\&= 43.98 \text{ in}\end{aligned}$$

$$\begin{aligned}C &= 2 \cdot \pi \cdot r \\&= 2 \cdot \pi \cdot 7 \\&= 43.98 \text{ in}\end{aligned}$$



Area:  $A = \pi r^2$

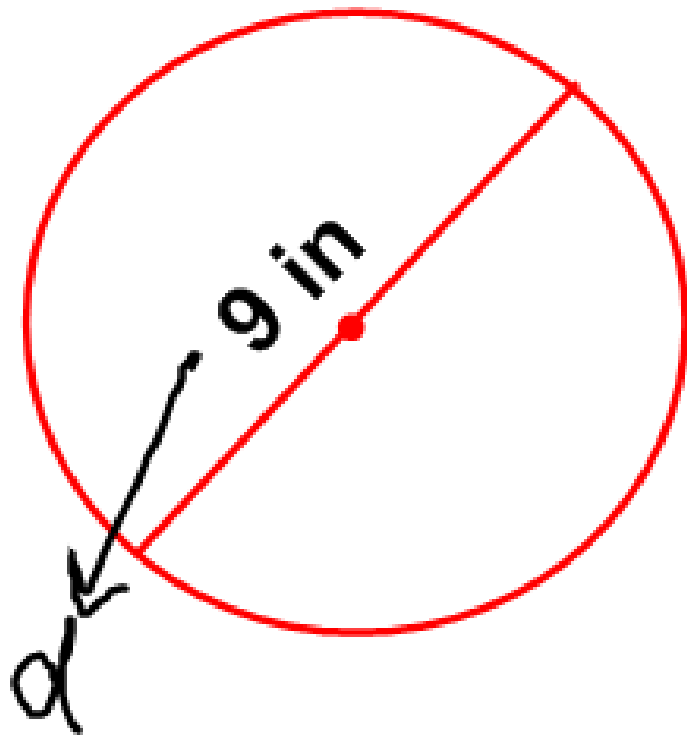
**Ex: Find the area.**



$$\begin{aligned} A &= \pi r^2 \\ &= \pi \cdot 4^2 \\ &= \pi \cdot 16 \\ &= 50.26 \text{ m}^2 \end{aligned}$$



Ex: Find the area.



$$r = 4.5$$

$$A = \pi r^2$$

$$= \pi \cdot 4.5^2$$

$$= \pi \cdot 20.25$$

$$= 63.62 \text{ in}^2$$



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Homework

p.82 #1-13

