

**Area of a Circle**

$$A = \pi r^2$$

if  $d = 14$ , then  $r = 7$

- 1) The diameter of a circle is 14 inches. Find the area of the circle to the nearest square inch.

$$\begin{aligned} A &= \pi r^2 \\ &= (3.14)(7)^2 \\ &= (3.14)(49) \end{aligned}$$

$$A \approx 154 \text{ in}^2$$

- 2) The radius of a circle is 22 inches. Find the area of the circle to the nearest inch.

$$\begin{aligned} A &= \pi r^2 \\ &= (3.14)(22)^2 \\ &= (3.14)(484) \end{aligned}$$

$$A \approx 1520 \text{ in}^2$$

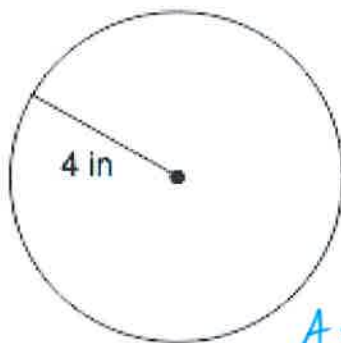
- 3) The diameter of a circle is 16 cm. Find the area of the circle to the nearest centimeter.

if  $d = 16$   
then  $r = 8$

$$\begin{aligned} A &= \pi r^2 \\ &= (3.14)(8)^2 \\ &= (3.14)(64) \end{aligned}$$

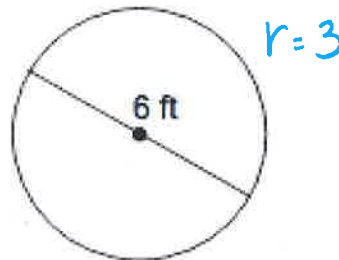
$$A \approx 201 \text{ cm}^2$$

4)



$$\begin{aligned} A &= \pi r^2 \\ &= (3.14)(4)^2 \\ &= (3.14)(16) \\ &\approx 50 \text{ in}^2 \end{aligned}$$

5)



$$\begin{aligned} A &= \pi r^2 \\ &= (3.14)(3)^2 \\ &= (3.14)(9) \\ &\approx 28 \text{ ft}^2 \end{aligned}$$

6) Find the area given the circumference.  $C = 56.5 \text{ cm}$

$$\begin{aligned}C &= 2\pi r \\56.5 &= 2(3.14)r \\56.5 &= 6.28r \\9 &\approx r\end{aligned}$$

$$\begin{aligned}A &= \pi r^2 \\A &= (3.14)(9)^2 \\A &= (3.14)(81) \\A &\approx 254 \text{ cm}^2\end{aligned}$$

7) Find the area given the circumference.  $C = 12.6 \text{ yd}$

$$\begin{aligned}C &= 2\pi r \\12.6 &= 2(3.14)r \\12.6 &= 6.28r \\2 &\approx r\end{aligned}$$

$$\begin{aligned}A &= \pi r^2 \\&= (3.14)(2)^2 \\&= (3.14)(4) \\A &\approx 13 \text{ yd}^2\end{aligned}$$

8) Find the circumference given the area.  $A = 78.5 \text{ yd}^2$

$$\begin{aligned}A &= \pi r^2 \\78.5 &= (3.14)r^2 \\25 &= r^2 \\5 &= r\end{aligned}$$

$$\begin{aligned}C &= 2\pi r \\C &= (2)(3.14)(5) \\C &\approx 31.4 \text{ yd}\end{aligned}$$

9) Find the circumference given the area.  $A = 295.6 \text{ m}^2$

$$\begin{aligned}A &= \pi r^2 \\295.6 &= (3.14)r^2 \\94.14 &= r^2 \\9.7 &\approx r\end{aligned}$$

$$\begin{aligned}C &= 2\pi r \\C &= (2)(3.14)(9.7) \\C &\approx 61 \text{ m}\end{aligned}$$

10) Find the area given the circumference.  $C = 75.4 \text{ m}$

$$\begin{aligned}C &= 2\pi r \\75.4 &= 2(3.14)r \\75.4 &= 6.28r \\12 &\approx r\end{aligned}$$

$$\begin{aligned}A &= \pi r^2 \\&= (3.14)(12)^2 \\&= (3.14)(144) \\A &\approx 452 \text{ m}^2\end{aligned}$$