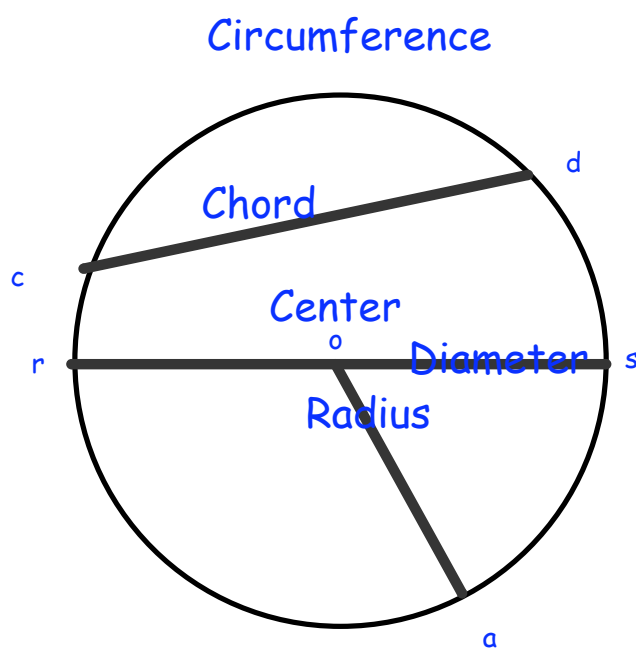


Chapter 9.4 Pi and the circle



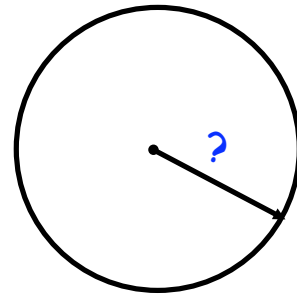
Secret formula

$$C = \pi \cdot \text{Dia}$$

Question:

If the distance around a circle is 34.7 inches. What is the radius of that circle?

$$\begin{aligned} \frac{34.7}{\pi} &= \frac{\pi \cdot D}{\pi} \\ \frac{34.7}{2\pi} &= \frac{D}{2} \\ 5.5\dots &= r \end{aligned}$$



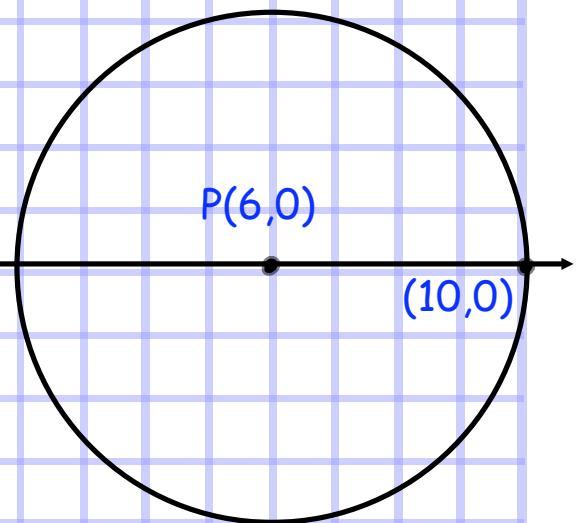
Find the circumference of  P

$$C = \pi \cdot D$$

$$C = \pi \cdot 8$$

$$C = 8\pi$$

$$C \approx 25.12 \dots \text{units}$$



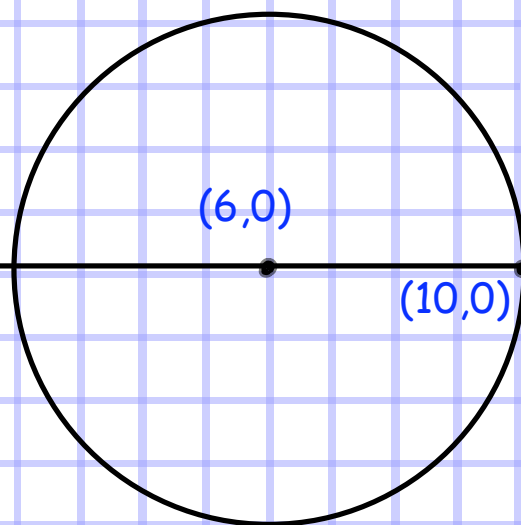
Find the area of $\odot P$

$$A = \pi r^2$$

$$A = \pi \cdot 4^2$$

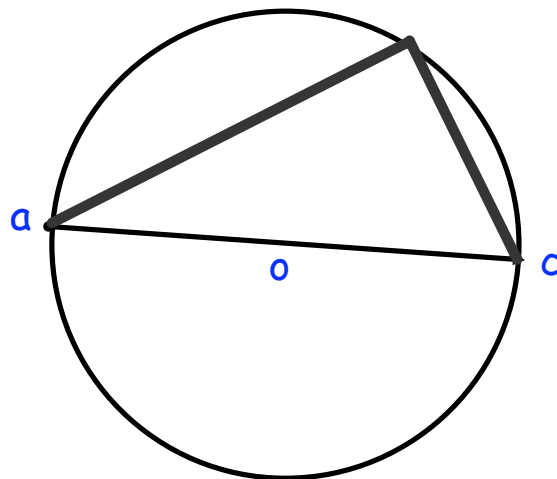
$$A = 16\pi$$

$$= 50.26 \dots \text{units}^2$$



Right angle property of circles

Draw a line from point a to some point on the circle then to point c. What angle is formed?



$$C = \pi \cdot D$$

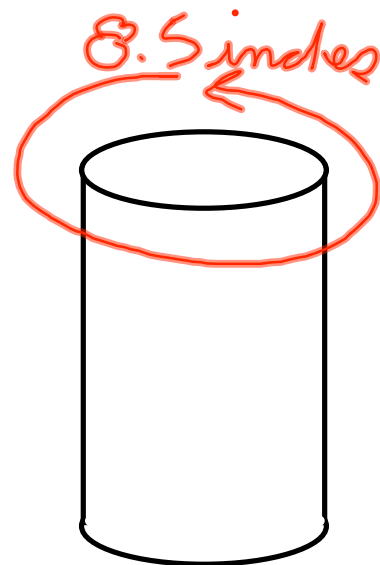
$$16) \quad 8.5 = \pi \cdot D$$

$$\frac{8.5}{\pi} = \frac{\pi \cdot D}{\pi}$$

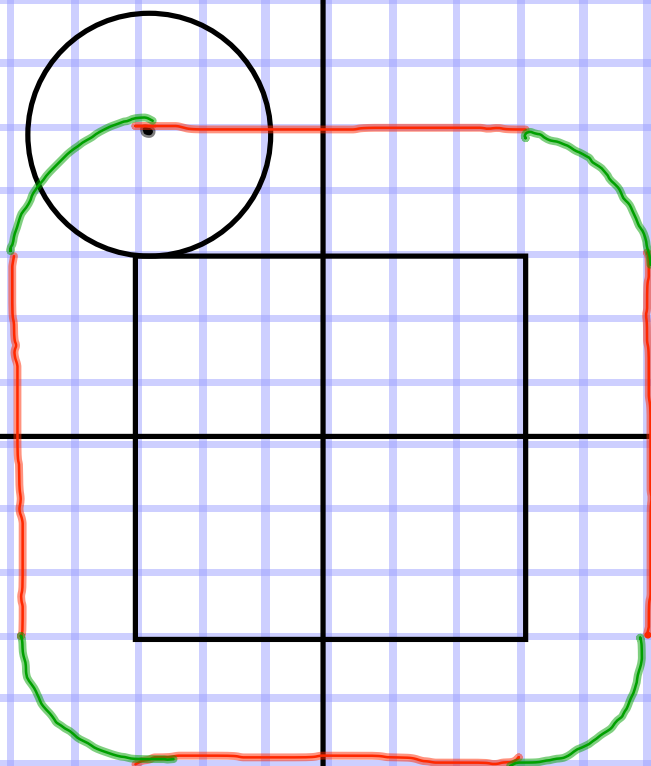
$$\frac{8.5}{\pi} = D$$

or

$$2.7 \text{ in} \approx D$$



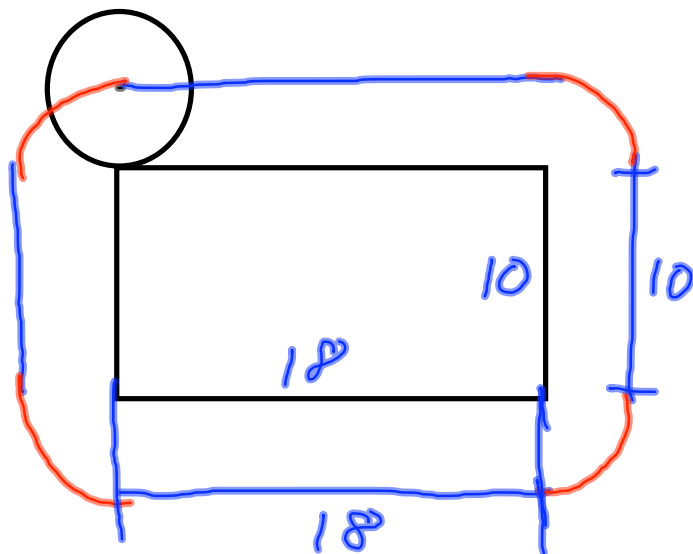
A circle of radius 2 rolls along the outside of the square. How far does the center of the circle travel after one complete trip around?



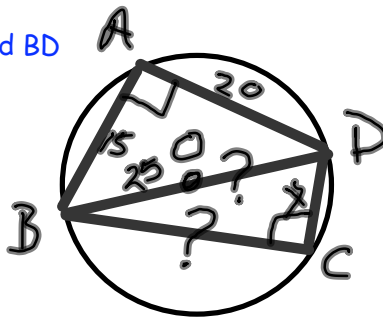
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#15 & 20-24 & 31, 32

15)



20) Use pythagorean theorem to find BD
 $\overline{BD} = 25$



How to find BC

$$7^2 + x^2 = 25^2$$

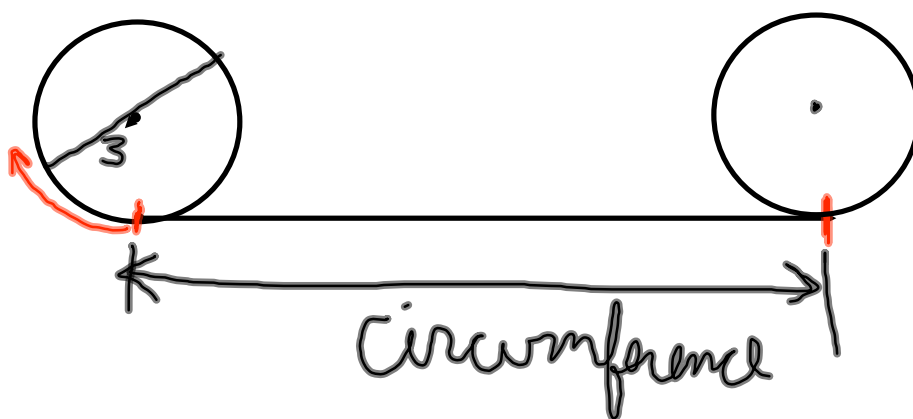
$$49 + x^2 = 625$$

$$\begin{array}{r} -49 \\ \hline \end{array} \quad \begin{array}{r} -49 \\ \hline \end{array}$$

$$x^2 = 576$$

$$x = 24$$

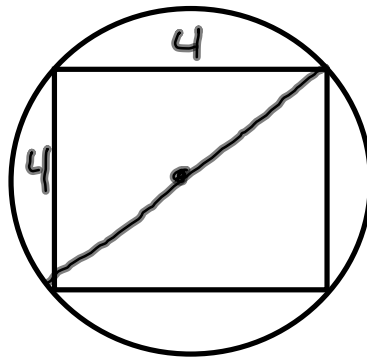
21)



22)

a) = 5.66 in

b) = 25.16 in²



a) $4^2 + 4^2 = x^2$

$32 = x^2$

$5.66 \approx x$

c) probability = $\frac{\text{Area of } \square}{\text{Area of } \circ}$

(change answer to a percent.)

b) $A_{\square} = \pi(2.83)^2$

$A_{\circ} = \pi \cdot 8$

$A_{\circ} = 25.16$

23)

add up red @ blue
distances

