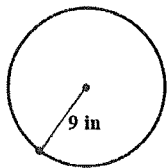


1) Find the area:



$$A_{\text{circle}} = \pi r^2$$

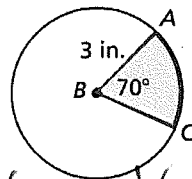
$$= \pi (9)^2$$

$$= 81\pi$$

$$A = 81\pi \text{ sq. in.}$$

$$A \approx 254.47 \text{ in}^2$$

2) Find the **area** of sector  $ABC$ .



(portion of circle) (A circle)

$$\left(\frac{70^\circ}{360}\right) \pi r^2$$

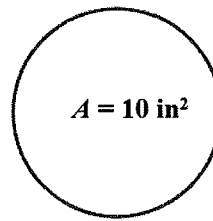
$$\left(\frac{7}{36}\right) \pi (3^2)$$

$$\frac{7}{36} \cdot \frac{9\pi}{1} = \frac{7 \cdot 9\pi}{36} = \frac{7\pi}{4}$$

$$A = \frac{7\pi}{4} \text{ sq. in.}$$

$$A \approx 5.50 \text{ in}^2$$

3) Find the radius:



$$A_{\text{circle}} = \pi r^2$$

$$10 = \pi r^2$$

$$\frac{10}{\pi} = \frac{\pi r^2}{\pi}$$

$$\frac{10}{\pi} = r^2$$

$$\sqrt{\frac{10}{\pi}} = r$$

$$\frac{\sqrt{10}}{\sqrt{\pi}}, \frac{\sqrt{10}}{\sqrt{\pi}}$$

$$r = \frac{\sqrt{10\pi}}{\pi} \text{ in}$$

$$r \approx 1.78 \text{ in}$$

4) Find the exact simplified form and the decimal approximation.

$$x = \frac{5}{3} \left(\frac{2\pi}{3}\right) - \pi \left(\frac{1}{3}\right)^2$$

$$\frac{10\pi}{9} - \pi \cdot \frac{1}{9}$$

$$\frac{10\pi}{9} - \frac{\pi}{9}$$

$$\frac{9\pi}{9} = \pi$$

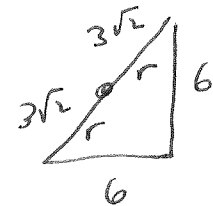
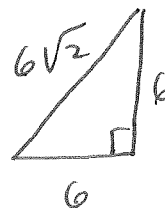
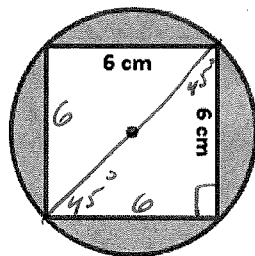
Exact Answer:

$$x = \pi$$

Decimal Approximation:

$$x \approx 3.14$$

5) The figure is a square inscribed in a circle. Find the shaded area. Be sure to show a plan, an expression with formulas. Substitute and simplify. Hint: First find the diameter and radius.



plan

$$A_{\text{circle}} - A_{\text{square}}$$

$$\pi r^2 - bh$$

$$\pi (3\sqrt{2})^2 - 6 \cdot 6$$

$$3\sqrt{2} \cdot 3\sqrt{2} \cdot \pi - 36$$

$$3 \cdot 3 \cdot \sqrt{2} \cdot \sqrt{2} \pi - 36$$

$$\frac{3 \cdot 3 \cdot 2 \cdot \pi}{9} - 36$$

$$18\pi - 36$$

$$A = 18\pi - 36 \text{ cm}^2$$

$$A \approx 20.55 \text{ cm}^2$$