

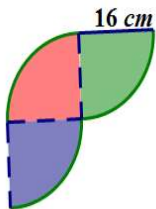
Circle Word Problems Worksheets

1. A landscape designer wants to include a semicircular patio at the end of a square sandbox. She knows that the area of the semicircular patio is 25.12 cm^2 .

a) Draw a picture to represent this situation.

b) What is the length of the side of the square?

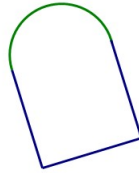
2. Michael wants to create a tile pattern out of three quarter circles for his kitchen backsplash. He will repeat the three quarter circles throughout the pattern. Find the area of the tile pattern that Michael will use. Approximate π as 3.14.



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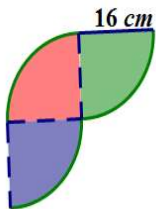
b) What is the length of the side of the square?

If the area of the patio is 25.12 cm^2 , then we can find the radius by solving the equation $A = \frac{1}{2}\pi r^2$ and substituting the information that we know. If we approximate π to be 3.14 and solve for the radius, r , then

$$\begin{aligned}25.12 \text{ cm}^2 &\approx \frac{1}{2}\pi r^2 \\ \frac{2}{1} \cdot 25.12 \text{ cm}^2 &\approx \frac{2}{1} \cdot \frac{1}{2}\pi r^2 \\ 50.24 \text{ cm}^2 &\approx 3.14r^2 \\ \frac{1}{3.14} \cdot 50.24 \text{ cm}^2 &\approx \frac{1}{3.14} \cdot 3.14r^2 \\ 16 \text{ cm}^2 &\approx r^2 \\ 4 \text{ cm} &\approx r\end{aligned}$$

The length of the diameter is 8 cm; therefore, the length of the side of the square is 8 cm.

2. Michael wants to create a tile pattern out of three quarter circles for his kitchen backsplash. He will repeat the three quarter circles throughout the pattern. Find the area of the tile pattern that Michael will use. Approximate π as 3.14



There are three quarter circles in the tile design. The area of one quarter circle multiplied by 3 will result in the total area.

$$\begin{aligned}A &= \frac{1}{4}\pi \cdot (16 \text{ cm})^2 \\ A &\approx \frac{1}{4} \cdot 3.14 \cdot 256 \text{ cm}^2 \\ A &\approx 200.96 \text{ cm}^2\end{aligned}$$

$$A \approx 3 \cdot 200.96 \text{ cm}^2 \approx 602.88 \text{ cm}^2$$

The area of the tile pattern is approximately 602.88 cm^2 .

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