

Build Tasks — Answers



1. A circle has circumference 31.4 cm. What is its radius?

Solution

$$\begin{aligned} r &= C \div 2\pi = 31.4 \div 6.28 \\ &= 5 \text{ cm} \end{aligned}$$

2. A circle has area 78.5 cm^2 . What is its radius?

Solution

$$\begin{aligned} r &= \sqrt{A \div \pi} = \sqrt{78.5 \div 3.14} \\ &= \sqrt{25} = 5 \text{ cm} \end{aligned}$$

3. Circumference 25.12 m. Find r .



Solution

$$\begin{aligned} r &= 25.12 \div 6.28 \\ &= 4 \text{ m} \end{aligned}$$

4. A circle has area 200.96 mm^2 . Find its diameter.

Solution

$$\begin{aligned} r &= \sqrt{200.96 \div 3.14} = \sqrt{64} = 8 \\ d &= 2 \times 8 = 16 \text{ mm} \end{aligned}$$

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5. Find the perimeter of this semicircle.



Solution

$$\text{Straight edge} = 2 \times 8 = 16$$

$$\text{Arc} = \pi r = 3.14 \times 8 = 25.12$$

Perimeter

$$= 16 + 25.12 = 41.12 \text{ cm}$$

6. Find the area of this semicircle.



Solution

$$\begin{aligned} r &= 10; A = \frac{1}{2}\pi r^2 \\ &= 0.5 \times 3.14 \times 100 \\ &= 157 \text{ cm}^2 \end{aligned}$$

7. Find the area of this quarter circle.



Solution

$$\begin{aligned} A &= \frac{1}{4}\pi r^2 \\ &= 0.25 \times 3.14 \times 100 \\ &= 78.5 \text{ cm}^2 \end{aligned}$$

8. Find the perimeter, including both straight edges.



Solution

$$\begin{aligned} \text{Arc} &= \frac{1}{4} \times 2\pi r = \\ &0.5 \times 3.14 \times 12 = 18.84 \\ \text{Perimeter} &= 2(12) + 18.84 \\ &= 42.84 \text{ m} \end{aligned}$$

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9. A bicycle wheel has diameter 70 cm.
How far does it travel in one revolution?

Solution

$$\begin{aligned}C &= \pi d = 3.14 \times 70 \\ &= 219.8 \text{ cm}\end{aligned}$$

11. A semicircular window has diameter 1.4 m. Find its area.

Solution

$$\begin{aligned}r &= 0.7; A = 0.5 \times 3.14 \times 0.7^2 \\ &= 0.5 \times 3.14 \times 0.49 = 0.77 \text{ m}^2\end{aligned}$$

10. Which has the larger area: a circle with radius 8 cm, or a circle with circumference 43.96 cm?

Solution

$$\begin{aligned}r=8: A &= 3.14 \times 64 = 200.96 \\ C=43.96 \Rightarrow r=7: A &= 3.14 \times 49 = 153.86 \\ \text{Radius-8 circle is larger.}\end{aligned}$$

12. A circle has circumference 62.8 mm. Find its diameter.

Solution

$$\begin{aligned}d &= C \div \pi = 62.8 \div 3.14 \\ &= 20 \text{ mm}\end{aligned}$$