

8.1 Circles & Circumference

EQ: How can you find the circumference of a circle?

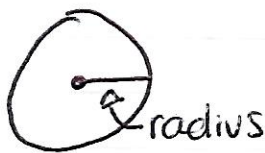
Circle: a set of points that are the same distance from the center.

→ Diameter: the distance across the circle through the center

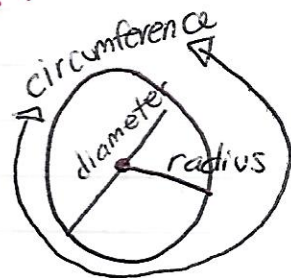
→ Radius: distance from the center to any point on the circle.



$$d = 2r$$



$$r = \frac{d}{2}$$



Circumference: the distance around a circle.

Formula: $C = \pi \cdot d$ or $C = 2\pi r$

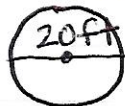
when given the diameter

when given the radius

$$\pi \approx 3.14 \approx \frac{22}{7}$$

Example 1: Finding the radius or diameter.

(1) Find the radius



$$r = \frac{d}{2}$$

$$r = \frac{20}{2} = 10 \text{ ft}$$

(2) Find the diameter

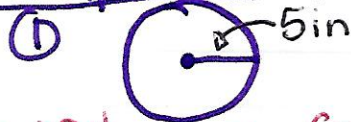


$$d = 2r$$

$$d = 2(4.5)$$

$$d = 9 \text{ cm}$$

Example 2: Find the circumference.



$$C = \pi d$$

$$C = \pi \cdot 10$$

$$C = 10\pi$$

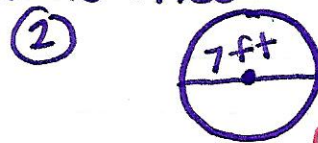
$$C = 31.4 \text{ in}$$

or $C = 2\pi r$

$$C = 2 \cdot \pi \cdot 5$$

$$C = 10\pi$$

$$C = 31.4 \text{ in}$$



$$C = \pi \cdot 7$$

$$C = \frac{22}{7} \cdot 7$$

$$C = 22 \text{ ft}$$

$$C = \pi d$$

$$C = \pi \cdot 7$$

$$C = 7\pi$$

$$C = 21.98 \text{ ft}$$