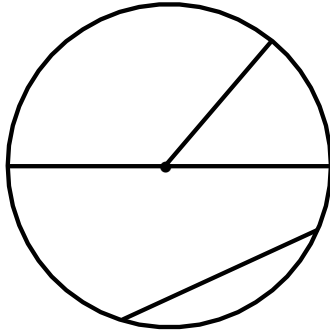


Circumference and Arc Length



Circumference - The distance around a circle.

$$C = 2\pi r$$

There are 360° in a circle.

There are 180° in a semicircle.

Central Angle - An angle whose vertex is at the center of the circle.

$$\text{Arc Length} = 2\pi r \cdot \frac{\text{central angle}}{360^\circ}$$

1. Find the missing measures. Round your answers to the nearest tenth.

a) Radius = 6 feet

Diameter =

Circumference =

b) Radius =

Diameter =

Circumference = 138.4 inches

c) Radius =

Diameter = 25.8 meters

Circumference =

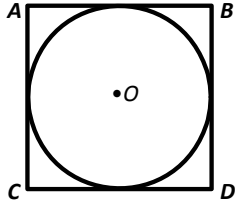
d) Radius = $\frac{x}{3}$

Diameter =

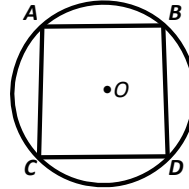
Circumference =

2. Find the exact circumference of each circle.

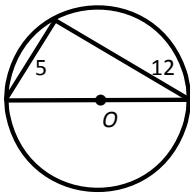
- a) Circle O is inscribed in square $ABCD$. Each side of square $ABCD$ is equal to 10.



- b) Square $ABCD$ is inscribed in Circle O and the length of each side of the square is equal to 6.



c)



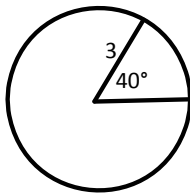
3. If the wheel of a bicycle has a diameter of 2.5 feet, what is the total distance traveled after the wheel makes 10 revolutions?

4. Frank wants to build a fence around a circular pool. If the diameter of the pool is 15 feet, and the fence is to be placed 5 feet from the edge of the pool, how many feet of fencing will be needed?

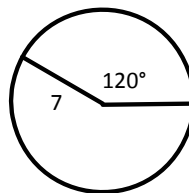
5. If the radius of a circle is doubled, what effect does it have on the circumference?

6. Find the length of each arc.

a)

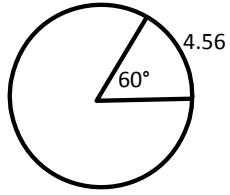


b)

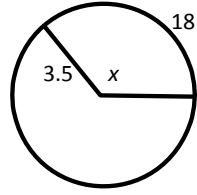


7. Find the value of x .

a) x is the circumference



b) x is the central angle



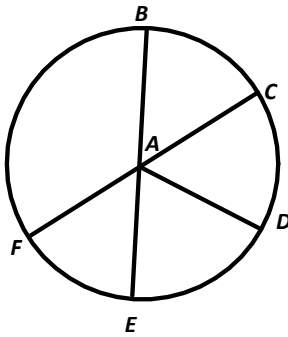
8. Find the value of each if:

$$\angle CAD \cong \angle EAD$$

FAC and BAE are diameters

$$\angle BAF = 6x$$

$$\angle EAF = 4x - 30$$



a) x

b) $\angle BAF$

c) $\angle FAE$

d) $\angle EAD$

e) $\angle BAC$

f) $\angle CAD$

9. Find the values of x and y .

