6.- Calculate the Area of an Object

Calculate the Area of an object
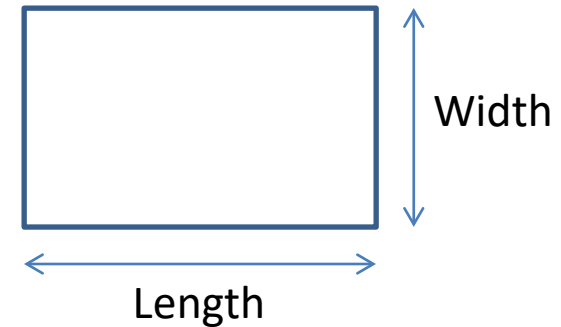## Rectangle and Triangle

Area of Rectangle

To find the area of rectangle we multiply its Length and Width.

- Area of Rectangle = L X W

Where,
  L is the length of longer side of rectangle
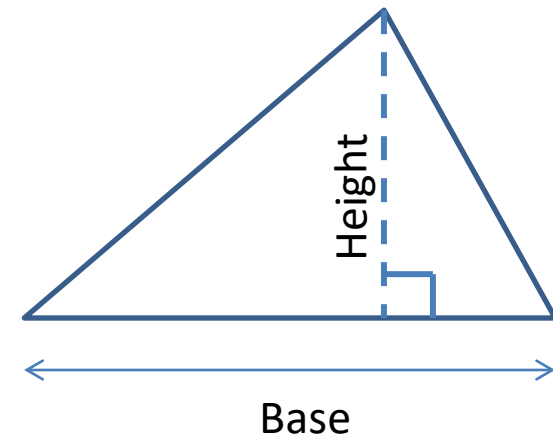 W is the length of smaller side of rectangle

Area of a Triangle

The area of the triangle is given by the formula mentioned below:

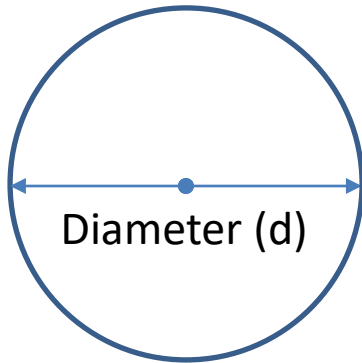- Area of a Triangle = $\dfrac{(B \; x \; H)}{2}$

Where,
  B is the Base of the Triangle.
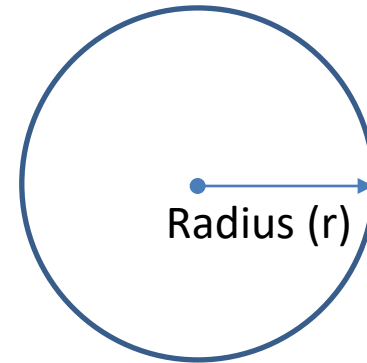 H is the perpendicular Height of the Triangle

Circles

DIAMETER

The measure of the length of a straight line going across the circle and passing through its center.
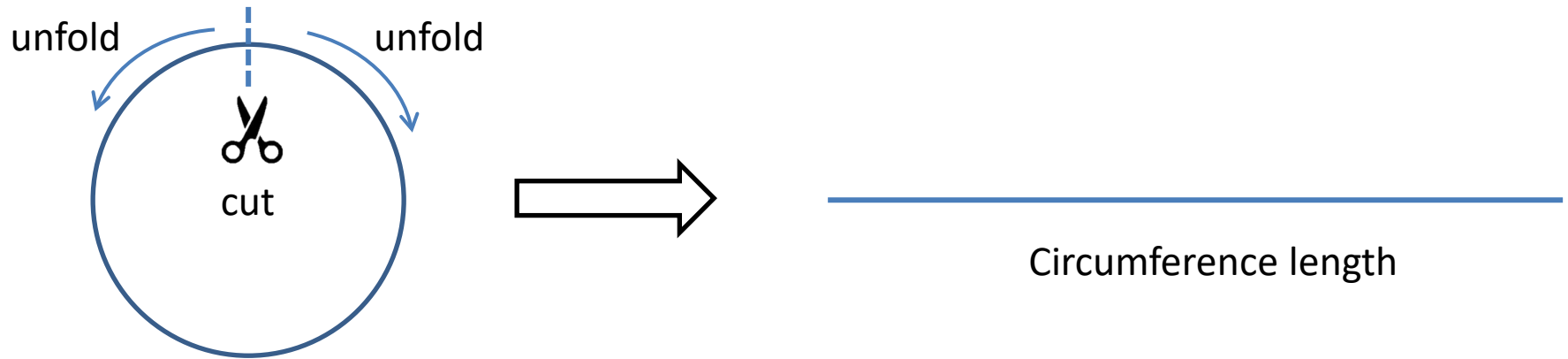
RADIUS

The measure of the distance from the center of a circle to its outside edge.

NOTE: The radius is always equal to ½ the diameter.

Calculate the Circumference of a Circle

unfold   unfold

cut

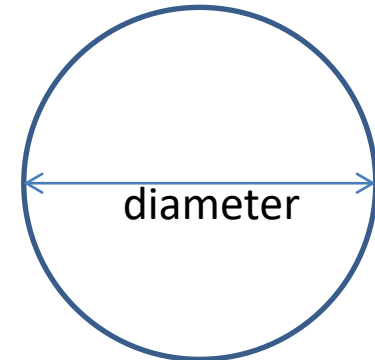Circumference length

Circumference of a Circle
To find the circumference of a circle we multiply Pi times the diameter:

- Circumference of a Circle = $\pi * d$
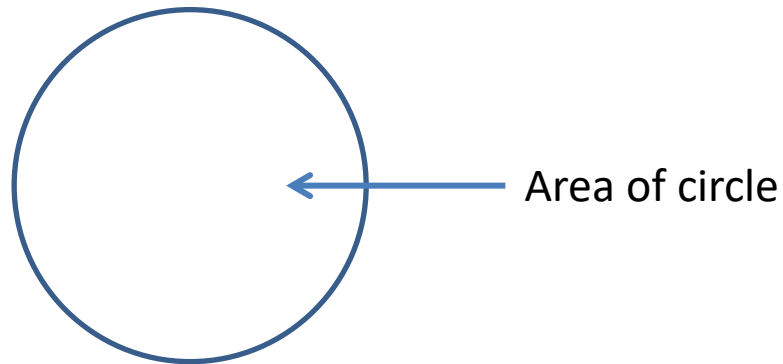
Where,
π (sounds like 'pie') is 3.1416
d is the diameter of the cylinder

diameter

Calculate the Area of an object

Circle

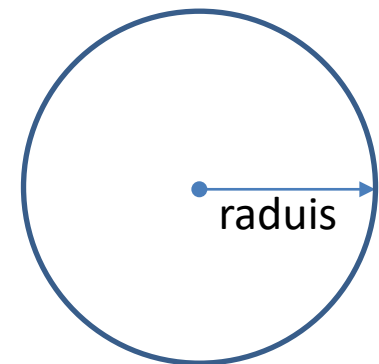Area of circle

Area of a Circle

To find the area of a circle we multiply Pi times the radius squared

- • Area of Circle = $\pi\, r^2$
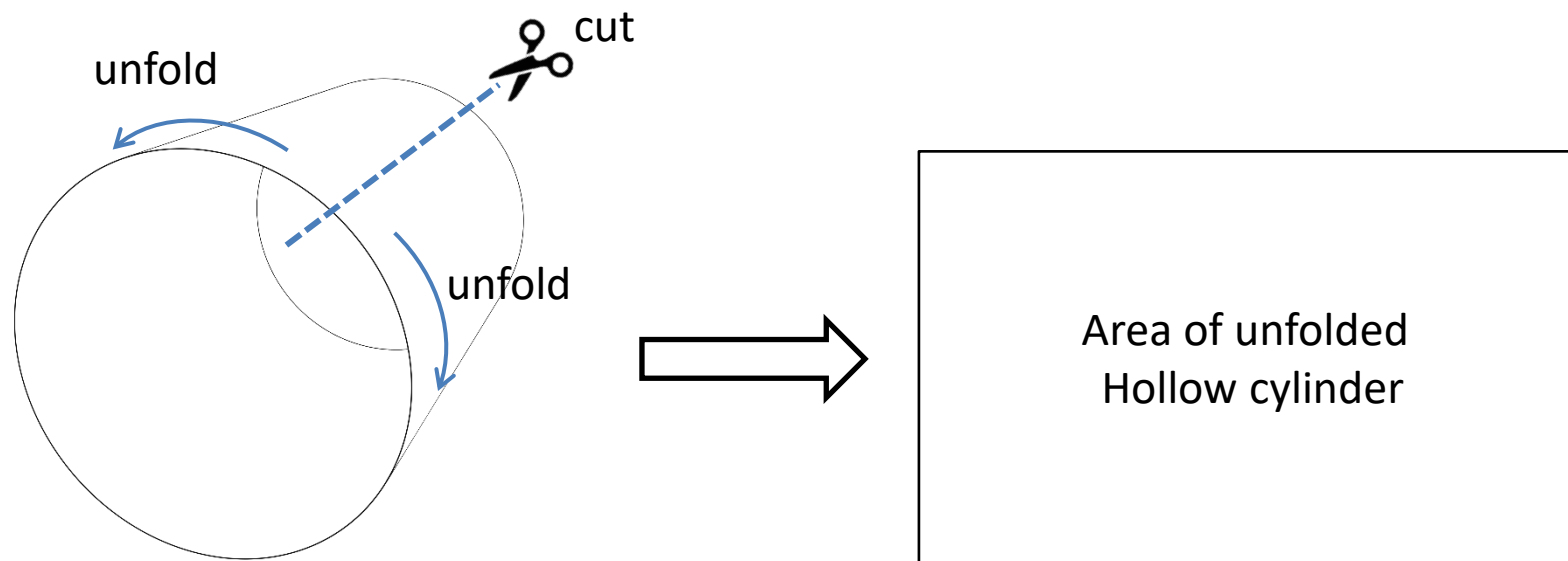
Where,
   π (sounds like 'pie') is 3.1416
   r is the radius of the circle (radius is half the diameter)

raduis

Calculate the Area of an object

Hollow Cylinder

cut

unfold

unfold

Area of unfolded
Hollow cylinder

Calculate the Area of an object

Hollow Cylinder

Area of a Hollow Cylinder (no caps)

The area of a hollow cylinder is given by the formula mentioned below:
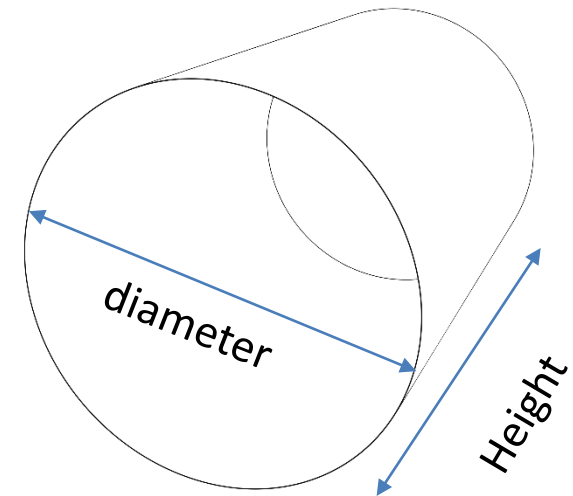
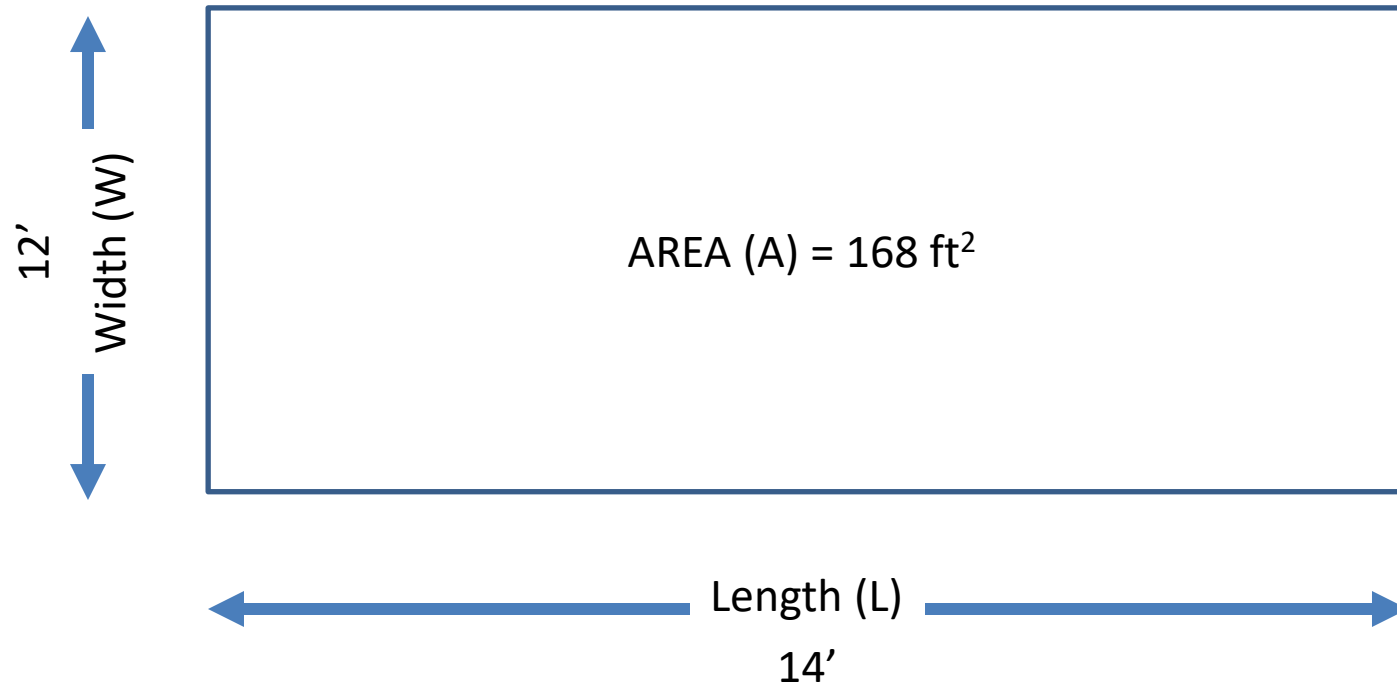- Area of a Hollow Cylinder $= \pi * d * h$

Where,

π (sounds like 'pie') is 3.1416

d is the diameter of the cylinder

H is the height of the cylinder

Area of a Rectangle or Square

12'

Width (W)

AREA (A) = 168 ft^2

Length (L)

14'

Formula   A = L x W
Calculations A = 14' x 12'
Area   A = 168 ft^2

Area of a Triangle

Formula = $\dfrac{(\text{Base x Height})}{2}$

Calculations = $\dfrac{(9' \text{ x } 7')}{2}$

Area= 31.5 ft^2

Height 7'

Base
9'
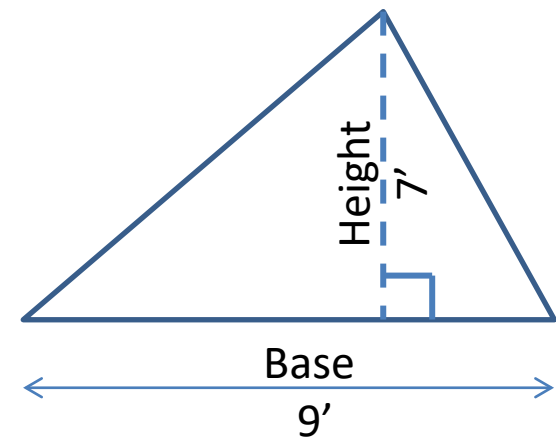
Area of a Circle

$$\text{Area} = \pi\, r^2$$

- Formula = $\pi\, r^2$

Where,
   π (sounds like 'pie') is 3.1416
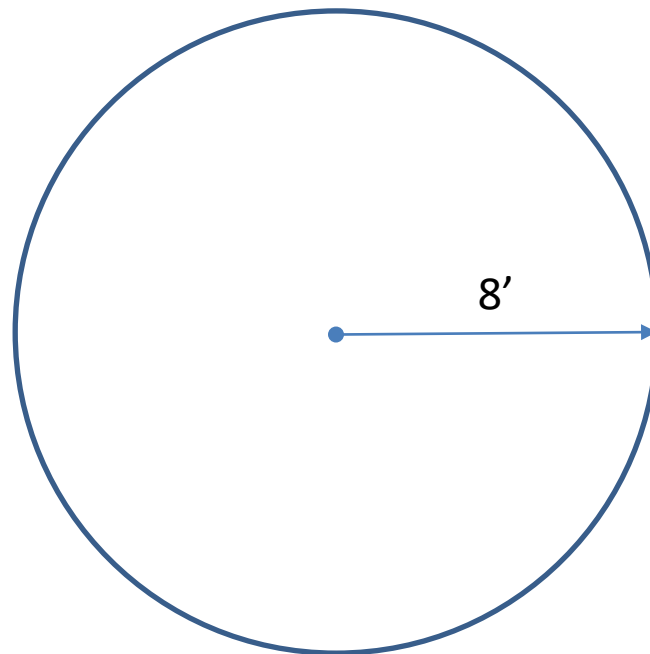   r is the radius of the circle (radius is half the diameter)
   NOTE: To square a number: multiply it by itself

Calculations:

$3.14 \times (8')^2$
$3.14 \times 8' \times 8'$
$200.96\ \text{ft}^2$

8'

Area: 200.96ft^2

Area of a Cylinder (Hollow)

Area of a Hollow Cylinder (no caps) (i.e. pipe)
The area of a hollow cylinder is given by the formula mentioned below:

- Area of a Hollow Cylinder $= \pi * d * h$

Where,
π (sounds like 'pie') is 3.1416
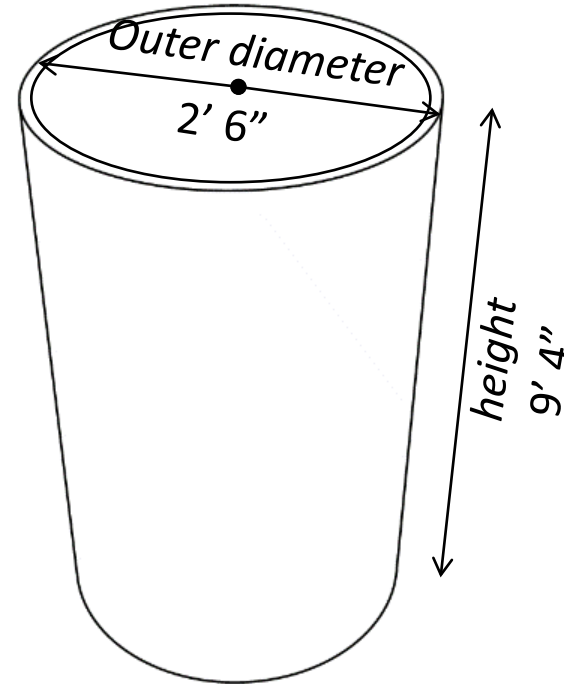**d** is the diameter of the cylinder
h is the height of the cylinder

Calculations:

$$\pi * d * h$$

3.14 x 2' 6" x 9' 4"
3.14 x 2.5' x 9.33'
73.24 ft^2

Area: 73.24 ft^2

HINT: Convert measurements in Feet-inches to Feet in decimals first.

11' 3"

8' 6"

Area Formula
A = L x W
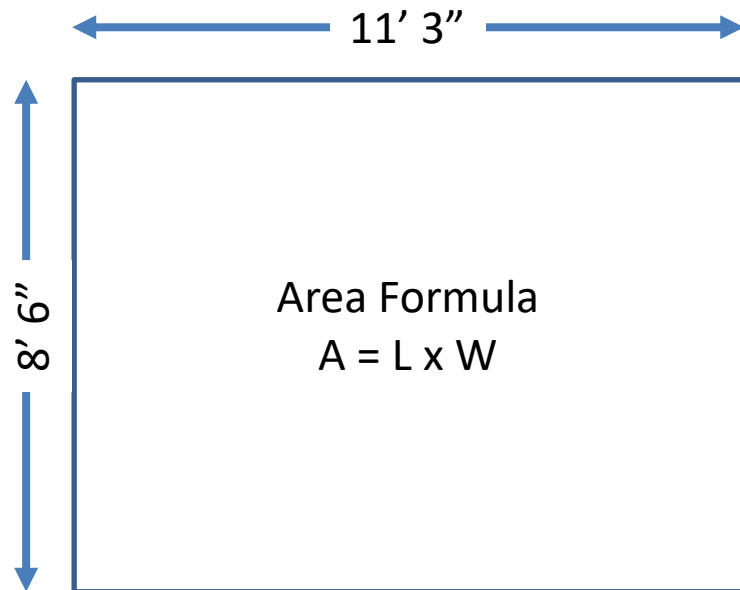
What is the area of this rectangle?

A = _____

Area of a Triangle
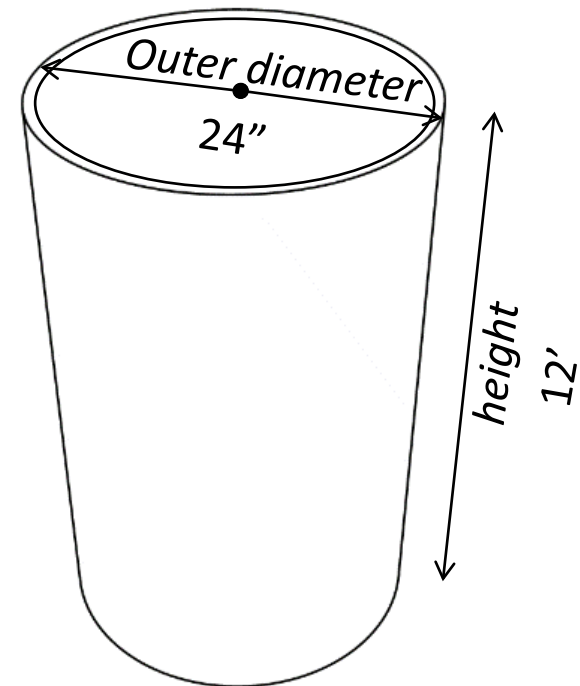## practice problem

Area=   ft^2

Height   8'

Base

19'
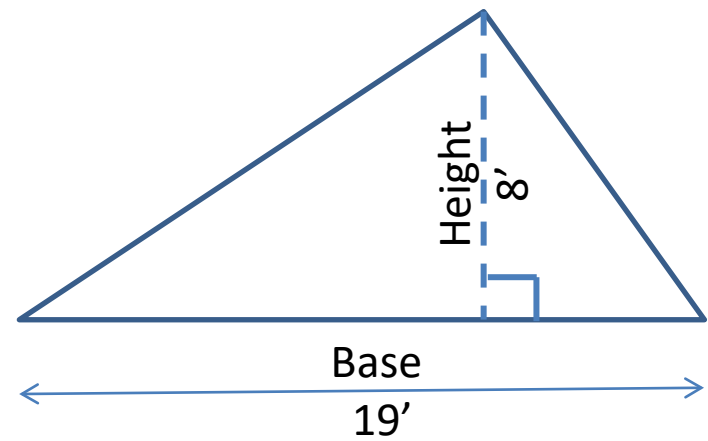
Area Practice Problems for a Circle

8'
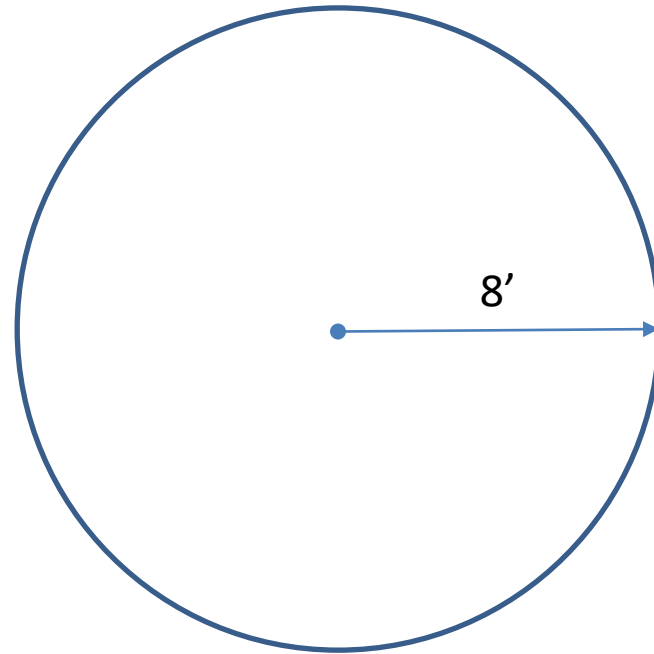
Area: _____

Area Practice Problems for a Cylinder (Hollow)

Outer diameter
24"

height
12'

Area: _____ ft^2