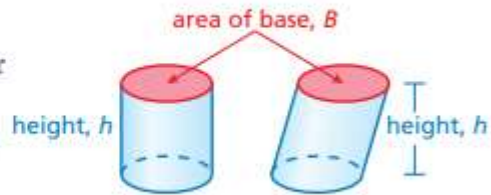## Key Idea

**Volume of a Cylinder**

**Words**   The volume $V$ of a cylinder
is the product of the area
of the base and the height
of the cylinder.

**Algebra**   $V = Bh$

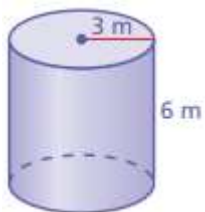area of base, $B$

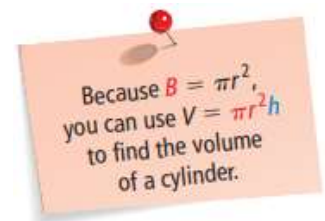height, $h$          height, $h$

**Remember**

The slanted
figure is called an
*oblique solid*. Volumes
of oblique solids are
calculated in the same
way as volumes of
right solids.

## Finding the Volume of a Cylinder

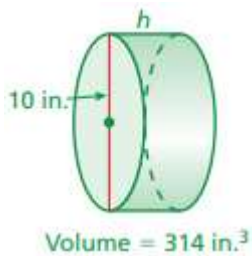Ex:)  Find the volume of the cylinder.  Round your answer to the nearest tenth.          Notes:

3 m

6 m

Because $B = \pi r^2$,
you can use $V = \pi r^2 h$
to find the volume
of a cylinder.

OYO:)  Find the volume of a cylinder with a radius of 4 feet and a height of          Notes:
15 feet.  Round your answer to the nearest tenth.
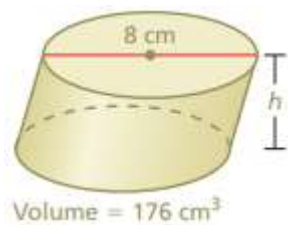
# Finding the Height of a Cylinder

Ex:)  Find the height of the cylinder.  Round your answer to the nearest whole number.

h

10 in.

Volume = 314 in.$^3$

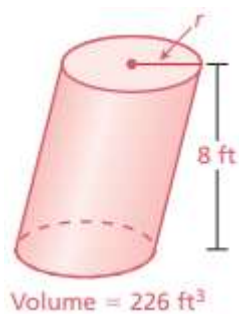OYO:)  Find the height of the cylinder.  Round your answer to the nearest tenth.

8 cm

h

Volume = 176 cm$^3$

# Finding the Radius of a Cylinder

Ex:)  Find the radius of the cylinder.  Round your answer to the nearest whole number.

r

8 ft

Volume = 226 ft$^3$

OYO:)  Find the radius of the cylinder.  Round your answer to the nearest tenth.

r

4.25 mm

Volume = 564 mm$^3$
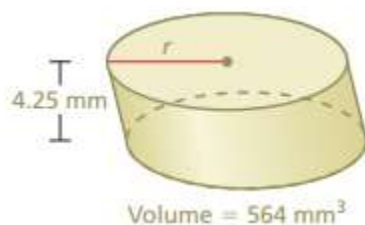
# Modeling Real Life

Ex:) You use the cylindrical barrel shown to collect and study rainwater. About how many gallons of water can the barrel hold? $\left(1ft^3 \approx 7.5gal\right)$

2.3 ft

1.8 ft

Ex:) A cylindrical swimming pool has a circumference of $18\pi$ feet and a height of 4 feet. About how many liters of water are needed to fill the swimming pool to 85% of its total volume? Justify your answer. $\left(1ft^3 \approx 28.3\ L\right)$

OYO:)  How much salsa is missing from the jar?  Explain your reasoning.                    Notes:

5 cm

MILD          MILD

Garden
Fresh
Chunky
SALSA
MILD
NET WT. 16 OZ.

10 cm

4 cm

How much salsa is missing from
the jar? Explain your reasoning.