Edgenuity

Warm-Up | Introduction to the Volume of a Cylinder

Lesson Question

Lesson Goals

Inspect the volume of a cylinder.

Identify _____ of a cylinder.

Generate the _____ for volume.

Calculate the _____ of a cylinder.

Words to Know

Fill in this table as you work through the lesson. You may also use the glossary to help you.

	a solid figure with two congruent circular or elliptical bases connected to a curved side
	the measure of the amount of space occupied by a three-dimensional solid object
	a segment that extends from the center of a circle to any point on the circle
	a chord that passes through the center of a circle
	to take the place of; to replace

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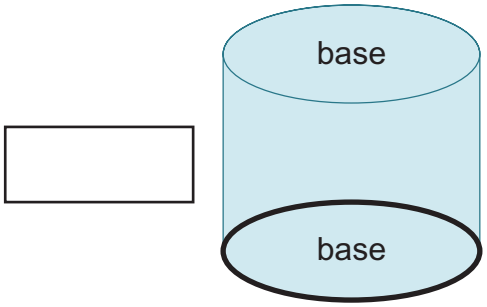
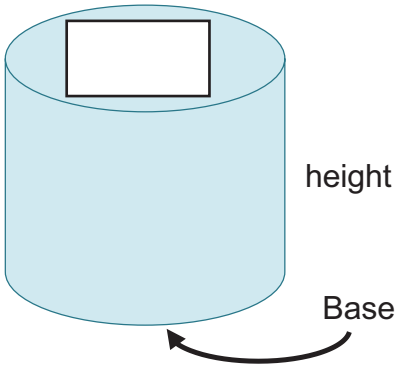
Identifying Parts of a Cylinder

A **cylinder** is a solid figure with [ ] bases that are congruent and [ ].

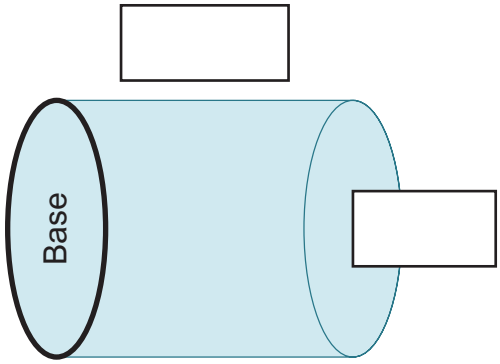


Base Versus Not a Base

- Base



- Not a Base



In a cylinder the bases are circular shapes.

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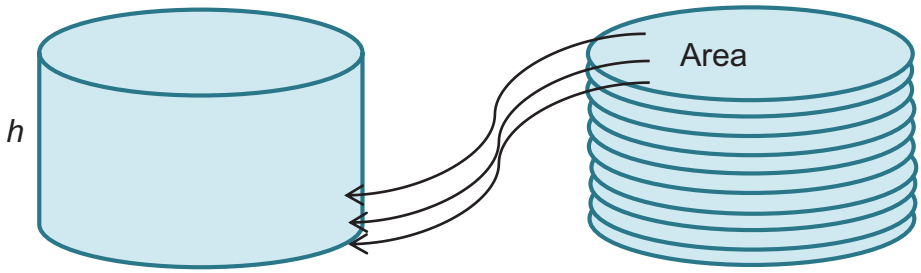
The Volume of a Cylinder

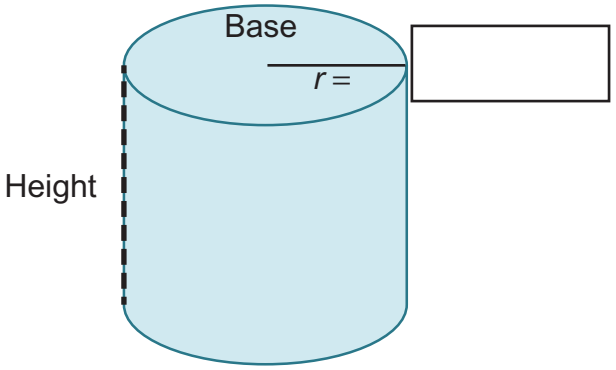
How is the **volume** of a cylinder measured?

$V =$ ☐

Where, B = base ☐



The Volume Formula



Volume = Area of ☐ × ☐

$V = Bh$

$V =$ ☐

We know that the area of this circle is ☐.

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Using the Formula to Calculate Volume

PROCEDURE

Follow the steps to find the volume.

1. **Substitute** the given measures for the corresponding ☐.
2. Simplify to find the volume.

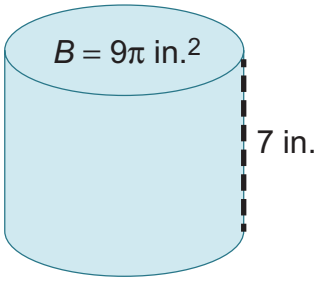
$V = Bh$

$V = (\square)(\square)$

$V = \square$ in.^3

Use the formula to calculate the volume of the cylinder.

$V = Bh$



When we leave the π symbol in the answer, it is the exact value.

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Finding Volume Given Radius and Height

EXAMPLE

Follow the steps to find the volume.

1. Substitute the given measures for the corresponding variables.
2. Simplify to find the ☐.

What is the volume of a cylinder with a **radius** of 5 feet and a height of 3 feet?

Cylinder $V = Bh$

$V = \square$

$V = \pi(\square)(\square)$

$V = \pi(\square)3$

$V = \square$ ft^3

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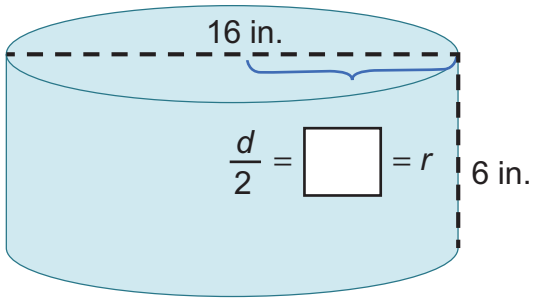
Determining Volume Given the Diameter

EXAMPLE

Consider this cylinder and the given **diameter** of the circle base.



What is the volume of the cylinder?

Cylinder $V = Bh$

$V = \square$

$V = \pi(\square)(\square)$

$V = \pi(\square)6$

$V = \square$ in.^3

Summary | Introduction to the Volume of a Cylinder

Lesson Question

How can you find the volume of a cylinder?

Answer

Use this space to write any questions or thoughts about this lesson.