

Lesson 1.5.6: Volume of Prisms and Cylinders

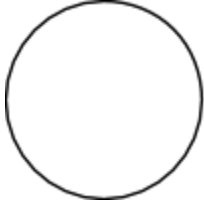
Targets:

1. I understand how to find the volume of prisms and cylinders.

Warm Up:

For each of the following figures, name the shape, write down the formula for its area, and then list the missing information you would need to find the area.

1.)



Name:

Area Formula:

Missing Info:

2.)



Name:

Area Formula:

Missing Info:

3.)



Name:

Area Formula:

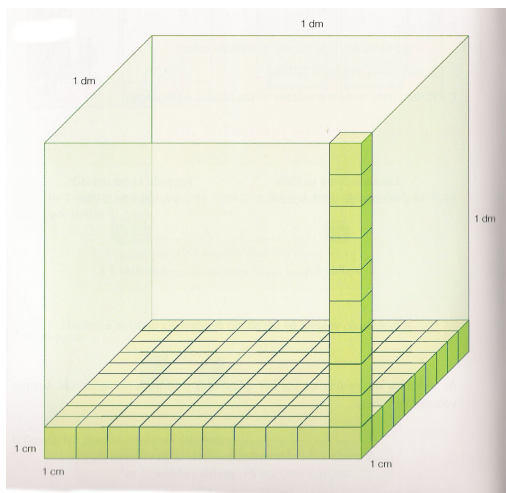
Missing Info:

Introducing Volume

1.) What is volume? Look up a definition.

2.) What is the difference between volume and area?

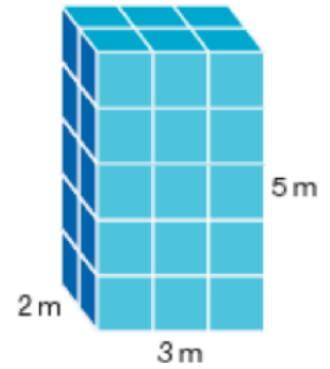
3.) Use this image to help you describe what volume is in your own words.



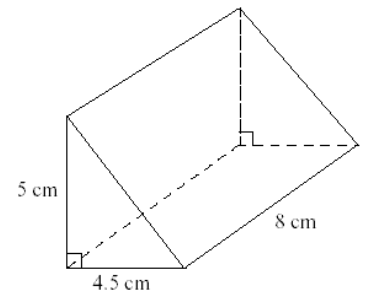
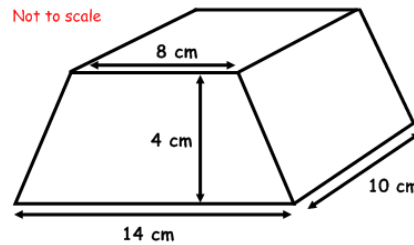
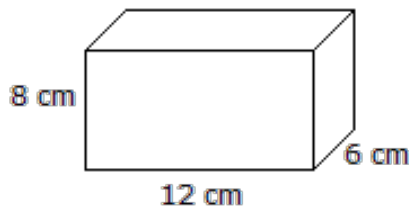
4.) Without looking up the formula, can you come up with a way to calculate the volume of a prism?

Volume of a Prism

- 1.) How many blocks make up this prism?
- 2.) What is the volume of this prism?
- 3.) Is there an easier way to find the volume than counting the blocks?
- 4.) What is the formula for the volume of a prism? Is your formula general enough for any kind of prism?

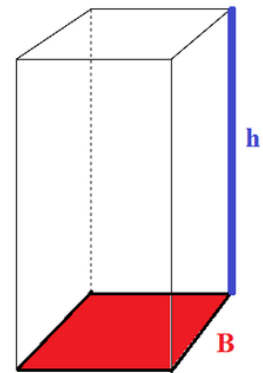


Find the volume of the following prisms:



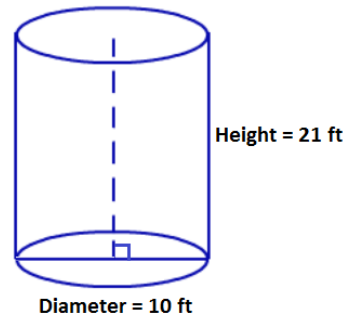
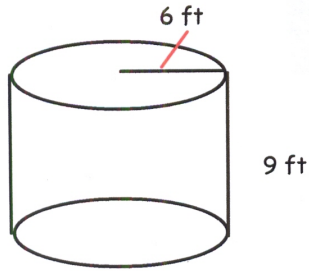
Volume of Cylinders

- 1.) Use this diagram to explain the difference between the volume of a cylinder and the volume of a prism.
- 2.) Is your formula for the volume of a Cylinder going to be different than the formula you have for the volume of a Prism?



- 3.) What is your formula for the volume of a Cylinder?

Find the volume of the following cylinders:



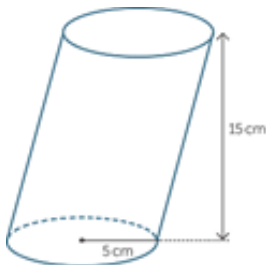
Application

Jerry is packing cylindrical cans with diameter 6 in. and height 10 in. tightly into a box that measures 3 ft by 2 ft by 1 ft. All rows must contain the same number of cans. The cans can touch each other. He then fills all the empty space in the box with packing foam.

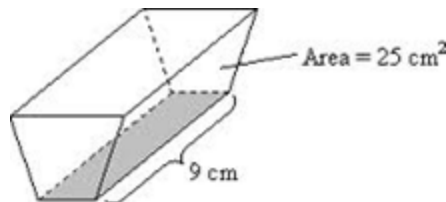
- Draw a diagram to represent this situation.
- How many cans can Jerry pack in one box?
- Find the volume of packing foam he uses.

Exit Ticket

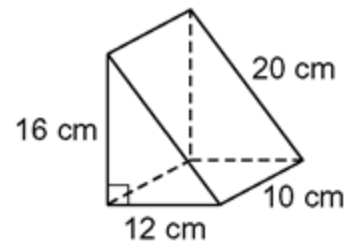
1.) Volume = _____



2.) Volume = _____



3.) Volume: _____



4.) A king-size waterbed mattress measures 6 ft. by 7 ft. by .75 ft. Water weighs 62.4 pounds per cubic foot. An empty mattress weighs 35 pounds. How much does a full mattress weigh?