

Name: _____

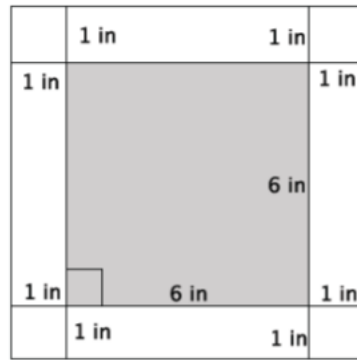
Date: _____

Ms. Streffacio

Class: _____

I can:

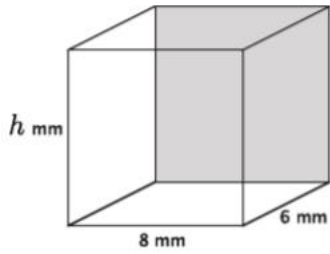
Do Now (3 minutes to complete):



- What is the length of one side of the smaller, inner square?
- What is the area of the smaller, inner square?
- What is the length of one side of the larger, outer square?
- What is the area of the larger, outer square?
- Use your answers in parts (b) and (d) to determine the area of the 1-inch white border of the figure.
- Explain your strategy for finding the area of the white border.

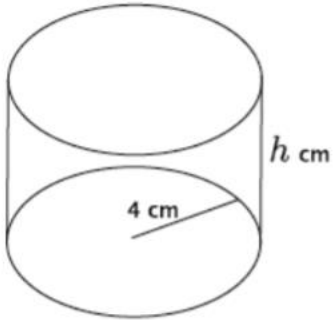
Teacher Model (10 minutes) You Watch, Listen, Copy:

Write an equation to determine the volume of the rectangular prism shown below.



Write an equation for volume, V , in terms of the area of the base, B .

Using what you learned in part (a), write an equation to determine the volume of the cylinder shown below.

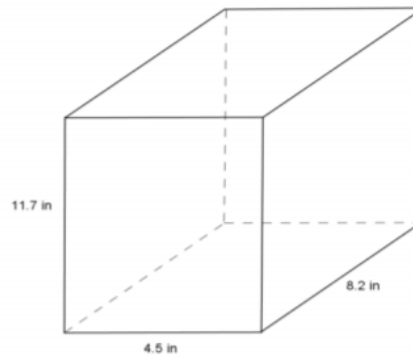


Check for Understanding- Did you understand the Model? (2 minutes) Teacher will check!

Use the diagram to the right to answer the questions.

a. What is the area of the base?

b. What is the height?

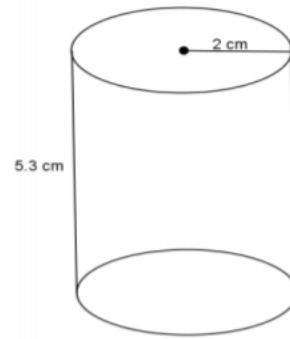


c. What is the volume of the rectangular prism?

We Do Together (10 minutes):

Use the diagram to the right to answer the questions.

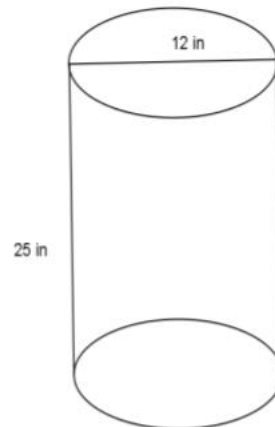
- What is the area of the base?
- What is the height?
- What is the volume of the right circular cylinder?



Final Check for Understanding before I send you to Independent Practice! Teacher will Check (4 minutes):

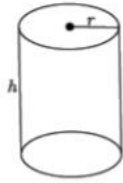
Use the diagram to the right to answer the questions.

- What is the area of the base?
- What is the height?
- What is the volume of the right circular cylinder?

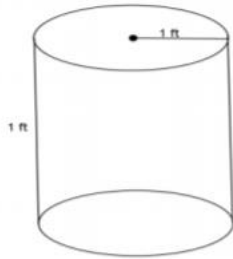


Independent Practice (In designated groups or on your own):

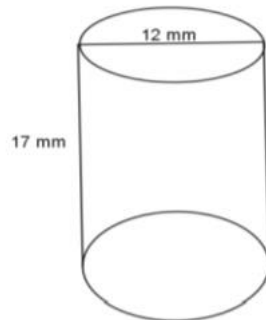
The formula to find the volume, V , of a right circular cylinder is $V = \pi r^2 h = Bh$, where B is the area of the base.



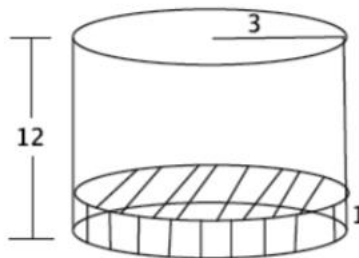
1. Use the diagram to help you find the volume of the right circular cylinder.



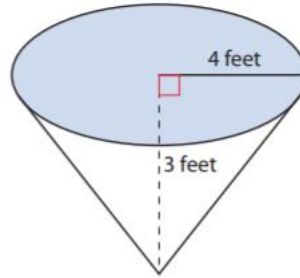
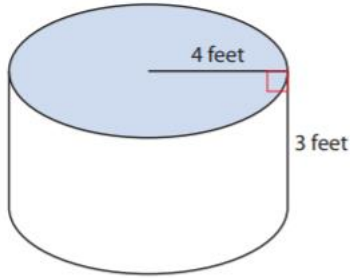
2. Use the diagram to help you find the volume of the right circular cylinder.



3. A cylindrical tank (with dimensions shown below) contains water that is 1-foot deep. If water is poured into the tank at a constant rate of $20 \frac{\text{ft}^3}{\text{min}}$ for 20 min., will the tank overflow? Use 3.14 to estimate π .



4.

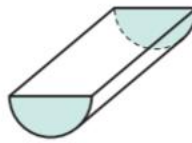


How is the base of the cylinder related to the base of the cone?

How are the heights of the cylinder and the cone related?

5. The formula for the volume of a cylinder is $V = \pi r^2 h$. The formula can also be written $V = Bh$. What does B represent? _____

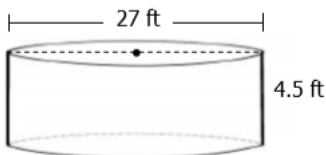
6. A barrel in the shape of a cylinder is cut in half lengthwise to make a water trough for horses. Does the expression $\pi\left(\frac{1}{2}r\right)^2 h$ represent the volume of water that the water trough holds? Explain why or why not.



How can you find a formula for the volume of this half-cylinder?



7.



A diagram of Eric's pool is shown on the left. He plans to fill his pool to a depth of 4 feet with a garden hose that has an 80 ft^3 per hour flow rate. How many hours will it take to fill the pool?

8. If a cylinder has a height of 7 inches and a volume of $2,908.33 \text{ in}^3$, find its diameter.

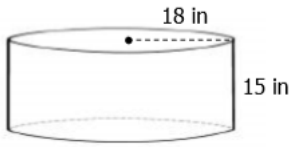
Closure – What did we do today?

How do we find the volume of a cylinder (explain in a sentence)?

Name: _____ Date: _____ Class: _____

Exit Ticket

1. Find the volume of the cylinder below.

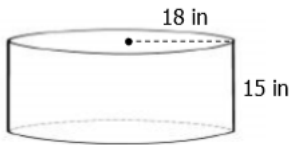


2. **SWIMMING POOL** A cylindrical swimming pool has a diameter of 16 feet and a height of 4 feet. About how many gallons of water can the pool contain? Round your answer to the nearest whole number. ($1 \text{ ft}^3 \approx 7.5 \text{ gal}$)

Name: _____ Date: _____ Class: _____

Exit Ticket

1. Find the volume of the cylinder below.

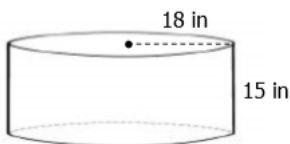


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