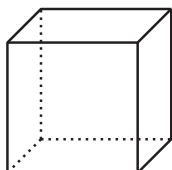


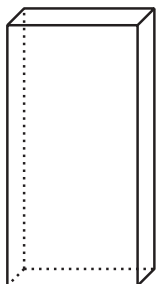
Lesson 16 Practice Problems

1. These solids all have the same volume. Which has the least surface area?

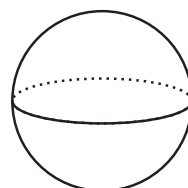
Solid A



Solid B



Solid C



Solid D



A. Solid A

B. Solid B

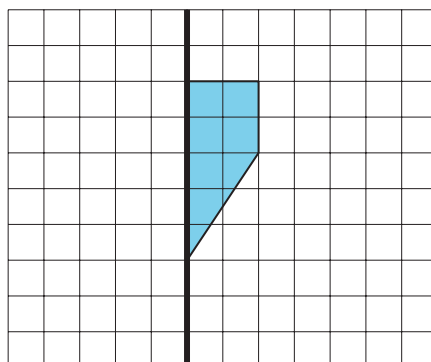
C. Solid C

D. Solid D

2. Rectangular prism *A* measures 3 inches by 4 inches by 8 inches. Rectangular prism *B* measures 5 inches by 5 inches by 6 inches.

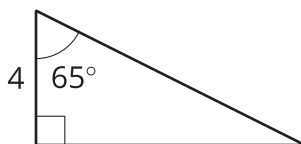
- Before doing any calculations, predict which prism has greater surface area to volume ratio.
- Calculate the surface area, volume, and surface area to volume ratio for each prism.

3. Suppose you have 2 pieces of ice with the same volume but in different shapes. If one of the pieces has a greater surface area than the other, it will cool a beverage faster than the ice with less surface area.
- Describe 2 different pieces of ice that have the same volume, but have different surface areas.
 - Which piece of ice will cool a beverage faster?
4. Suppose this two-dimensional figure is rotated 360 degrees using the vertical axis shown. Each small square on the grid represents 1 square inch. What is the volume of the three-dimensional figure?



(From Unit 5, Lesson 15.)

5. *Technology required.* A triangular prism has height 8 units. The base of the prism is shown in the image. What is the volume of the prism? Round your answer to the nearest tenth.



(From Unit 5, Lesson 15.)

6. A cone-shaped container is oriented with its circular base on the top and its apex at the bottom. It has a radius of 12 inches and a height of 8 inches. The cone starts filling up with water. What fraction of the volume of the cone is filled when the water reaches a height of 2 inches?

(From Unit 5, Lesson 14.)

7. Find the volume of a pyramid whose base is a square with sides of length 4 units and which has a height of 10 units.

(From Unit 5, Lesson 13.)

8. A solid has volume 4 cubic units and surface area 10 square units. The solid is dilated, and the image has volume 108 cubic units. What is the surface area of the image?

(From Unit 5, Lesson 8.)