

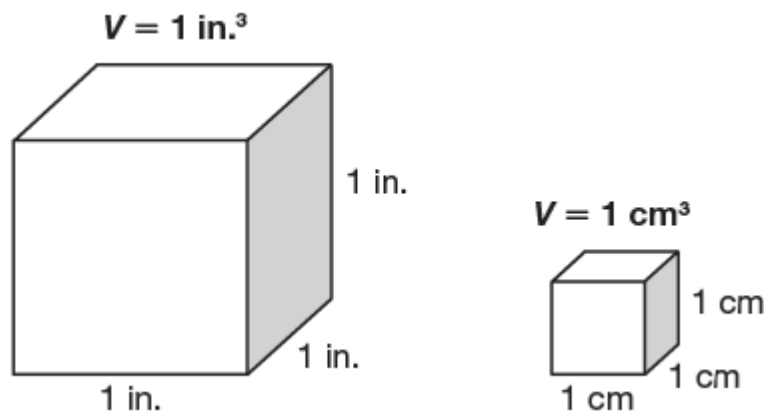


Objective: REVIEW

## Surface Area and Volume

**Surface area** is the total area of the surfaces of a solid figure. Surface area is measured in square units. You can use a net to help you find the surface area of a solid figure.

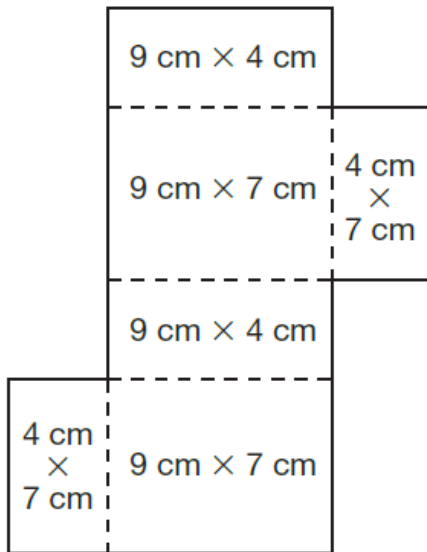
**Volume** ( $V$ ) is a measure of the number of cubic units that fit inside a solid figure. A cubic unit can be any unit such as a cubic inch ( $\text{in.}^3$ ) or a cubic centimeter ( $\text{cm}^3$ ), both shown below.



To find the volume of a rectangular prism or a cube, you can count the number of cubes that would fit inside the figure.



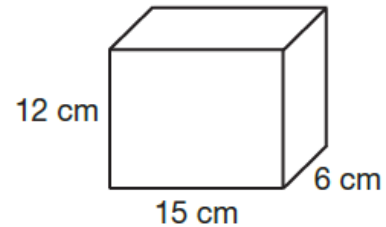
1. The net for a rectangular prism is shown below.



What is the surface area of the rectangular prism?

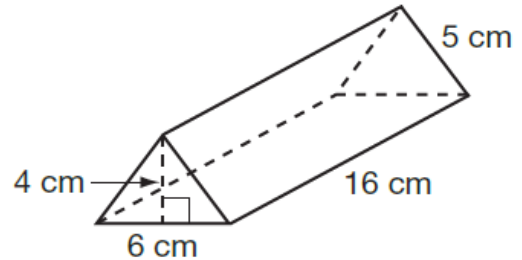
- A.  $504 \text{ cm}^2$   
 B.  $254 \text{ cm}^2$   
 C.  $252 \text{ cm}^2$   
 D.  $127 \text{ cm}^2$
2. What is the surface area of a cube with edge lengths of 12 inches?
- A.  $144 \text{ in.}^2$   
 B.  $432 \text{ in.}^2$   
 C.  $864 \text{ in.}^2$   
 D.  $1,728 \text{ in.}^2$

3. What is the surface area of this rectangular prism?



- A.  $342 \text{ cm}^2$   
 B.  $540 \text{ cm}^2$   
 C.  $684 \text{ cm}^2$   
 D.  $1,080 \text{ cm}^2$

4. What is the surface area of this triangular prism?

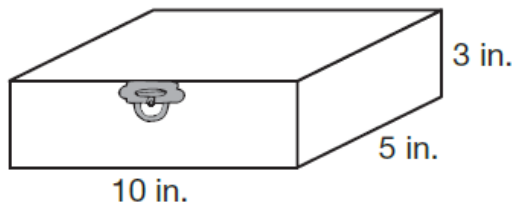


- A.  $264 \text{ cm}^2$   
 B.  $280 \text{ cm}^2$   
 C.  $312 \text{ cm}^2$   
 D.  $324 \text{ cm}^2$

5. Helena wants to paint a box in the shape of a cube with sides that are 18 inches long. What is the surface area that Helena will paint?

- A.  $324 \text{ in.}^2$                       C.  $1,296 \text{ in.}^2$   
B.  $648 \text{ in.}^2$                       D.  $1,944 \text{ in.}^2$

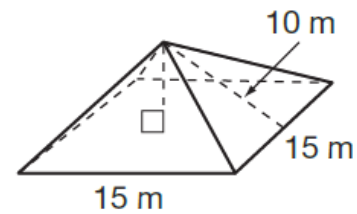
6. Erin's jewelry box is in the shape of a rectangular prism.



What is the surface area of Erin's jewelry box?

- A.  $95 \text{ in.}^2$                       C.  $160 \text{ in.}^2$   
B.  $150 \text{ in.}^2$                       D.  $190 \text{ in.}^2$

7. What is the surface area of the square pyramid?



- A.  $525 \text{ m}^2$   
B.  $275 \text{ m}^2$   
C.  $200 \text{ m}^2$   
D.  $175 \text{ m}^2$

8. A rectangular storage container is 15 feet long, 12 feet wide, and 8 feet high.

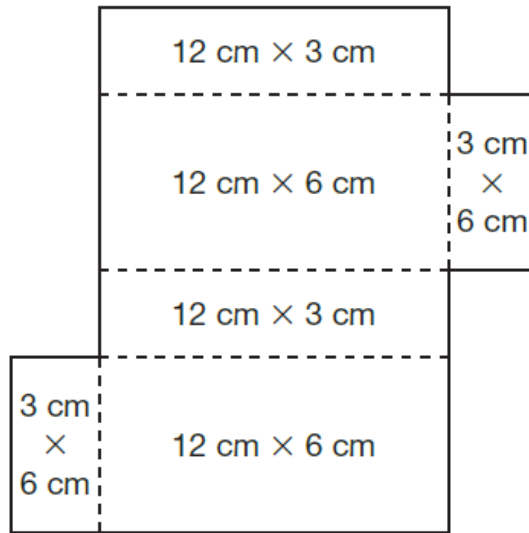
A. What is the surface area of the storage container? Show your work.

B. Explain how you found your answer.

---

---

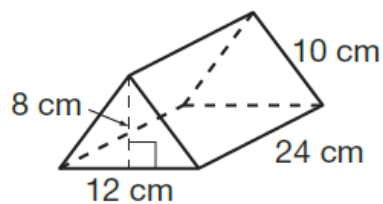
9. Circle the surface area of the rectangular prism, as illustrated by the net.



The surface area of the rectangular prism is

- 18
- 36
- 72  $\text{cm}^2$ .
- 126
- 252

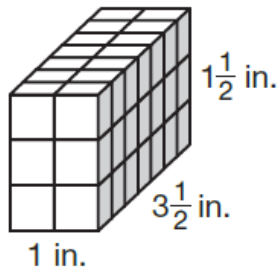
10. Circle every true statement about this triangular prism.



- A. The area of one triangular face is  $48 \text{ cm}^2$ .
- B. The area of one triangular face is  $96 \text{ cm}^2$ .
- C. The surface area of the triangular prism is  $720 \text{ cm}^2$ .
- D. The surface area of the triangular prism is  $768 \text{ cm}^2$ .
- E. The surface area of the triangular prism is  $864 \text{ cm}^2$ .



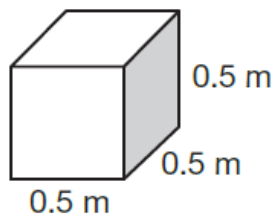
Use the rectangular prism below for questions 1 and 2.



- How many cubes are inside the rectangular prism?
 

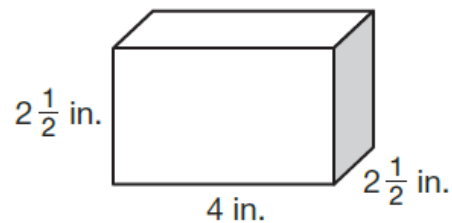
A. 27 cubes	C. 41 cubes
B. 28 cubes	D. 42 cubes
- If each cube has a volume of  $\frac{1}{8}$  cubic inch, what is the volume of the rectangular prism?
 

A. $3\frac{1}{4}$ in. <sup>3</sup>	C. $6\frac{1}{4}$ in. <sup>3</sup>
B. $5\frac{1}{4}$ in. <sup>3</sup>	D. 42 in. <sup>3</sup>
- What is the volume of the cube shown below?



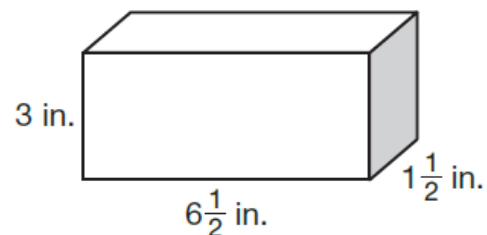
- |                         |                        |
|-------------------------|------------------------|
| A. 0.125 m <sup>3</sup> | C. 1.25 m <sup>3</sup> |
| B. 0.25 m <sup>3</sup>  | D. 1.5 m <sup>3</sup>  |

- What is the volume of this rectangular prism?



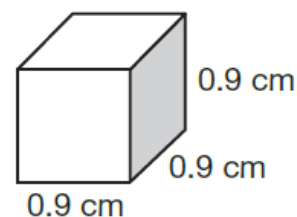
- |                        |                         |
|------------------------|-------------------------|
| A. 9 in. <sup>3</sup>  | C. 50 in. <sup>3</sup>  |
| B. 25 in. <sup>3</sup> | D. 100 in. <sup>3</sup> |

- What is the volume of this rectangular prism?



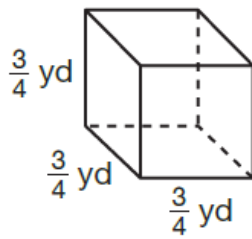
- |                                     |                                     |
|-------------------------------------|-------------------------------------|
| A. $18\frac{3}{8}$ in. <sup>3</sup> | C. $29\frac{1}{4}$ in. <sup>3</sup> |
| B. 27 in. <sup>3</sup>              | D. $40\frac{1}{2}$ in. <sup>3</sup> |

- What is the volume of this cube?



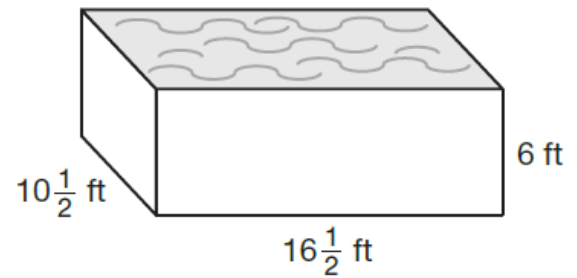
- |                          |
|--------------------------|
| A. 7.29 cm <sup>3</sup>  |
| B. 0.729 cm <sup>3</sup> |
| C. 0.27 cm <sup>3</sup>  |
| D. 0.027 cm <sup>3</sup> |

7. Keiko bought this plastic storage box for her room. What is the volume of the box?



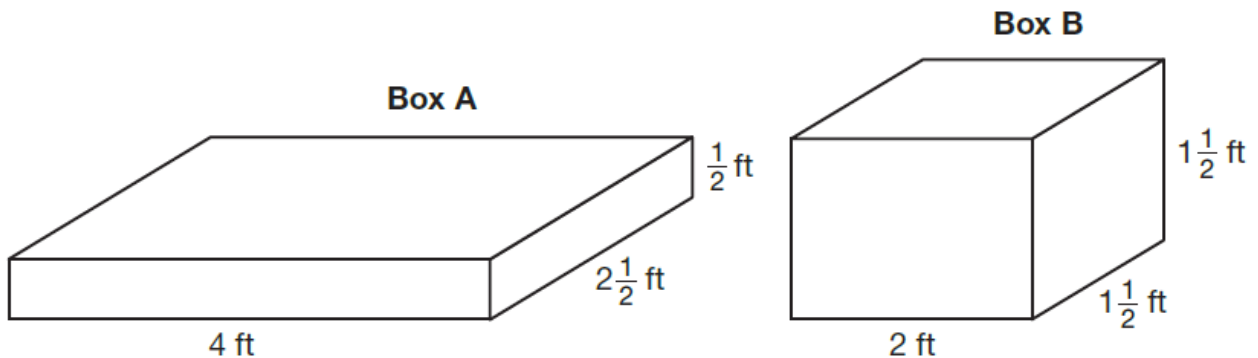
- A.  $\frac{27}{64} \text{ yd}^3$
- B.  $\frac{3}{4} \text{ yd}^3$
- C.  $2\frac{1}{4} \text{ yd}^3$
- D.  $6\frac{3}{4} \text{ yd}^3$

8. What is the maximum number of cubic feet of water this swimming pool can hold?



- A.  $1,039\frac{1}{2} \text{ ft}^3$
- B.  $1,030\frac{1}{2} \text{ ft}^3$
- C.  $961\frac{1}{2} \text{ ft}^3$
- D.  $960\frac{1}{4} \text{ ft}^3$

9. A self-storage facility sells the two boxes shown below.



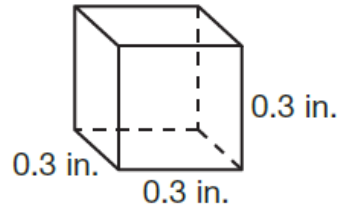
- A. Find the volume of Box A, in cubic feet, showing each step in the process.

---

- B. Which box has the greater volume, box A or box B? Show each step of your work.

---

10. Circle the number that makes the statement true.

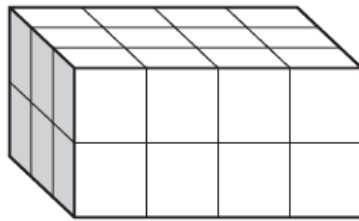


The volume of the cube is

- 0.027
- 0.27
- 0.9
- 2.7

cubic inches.

11. Look at the rectangular prism. Select True or False for each statement.



- A. There are 9 cubes inside the rectangular prism.  True  False
- B. There are 24 cubes inside the rectangular prism.  True  False
- C. If each cube has a volume of  $\frac{1}{2} \text{ cm}^3$ , the volume of the prism is  $12 \text{ cm}^3$ .  True  False
- D. If each cube has a volume of  $3 \text{ cm}^3$ , the volume of the prism is  $72 \text{ cm}^3$ .  True  False



## LESSON SE 4d

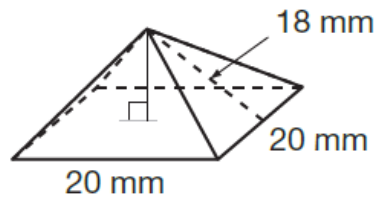


## Objective

Melissa wants to paint the outside of a box that is in the shape of a cube with edges that are 24 centimeters long. Each can of paint will cover 3,000 square centimeters. Select True or False for each statement.

- A. The surface area of the box is  $576 \text{ cm}^2$ .       True    False
- B. The surface area of the box is  $3,456 \text{ cm}^2$ .       True    False
- C. Melissa needs 1 can of paint.       True    False
- D. Melissa needs 2 cans of paint.       True    False
- E. Melissa needs 3 cans of paint.       True    False

Look at each statement. Is the statement true? Select Yes or No.



- A. The area of one triangular face is  $180 \text{ mm}^2$ .       Yes    No
- B. The area of one triangular face is  $360 \text{ mm}^2$ .       Yes    No
- C. The area of the base is  $200 \text{ mm}^2$ .       Yes    No
- D. The area of the base is  $400 \text{ mm}^2$ .       Yes    No
- E. The surface area of the square pyramid is  $580 \text{ mm}^2$ .       Yes    No
- F. The surface area of the square pyramid is  $1,120 \text{ mm}^2$ .       Yes    No

Circle every set of dimensions of rectangular prisms that have a volume of 60 cubic meters.

- A. length = 3 meters; width = 4 meters; height = 5 meters
- B. length = 4 meters; width = 5 meters; height = 2 meters
- C. length = 5 meters; width = 8 meters; height = 1.5 meters
- D. length = 6 meters; width = 2 meters; height = 5 meters
- E. length = 8 meters; width = 3 meters; height = 2 meters



