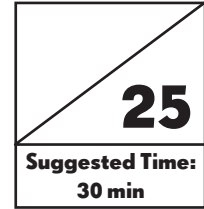


TEST PREP  
**15**

# Surface Area and Volume

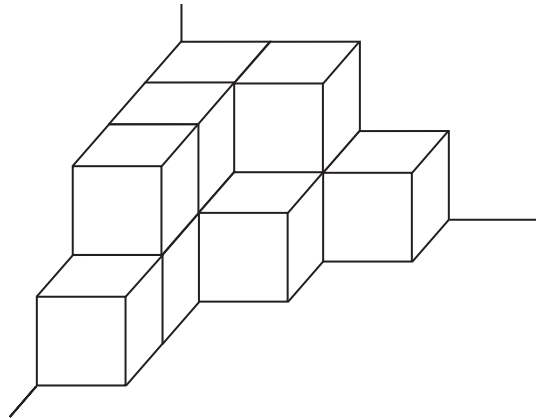


## Multiple Choice

(5 × 2 points = 10 points)

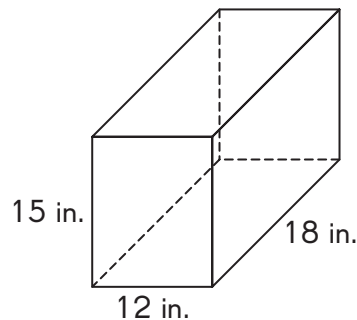
Fill in the circle next to the correct answer.

1. How many cubes are used to build the solid?



- (A) 9                      (B) 10                      (C) 11                      (D) 12

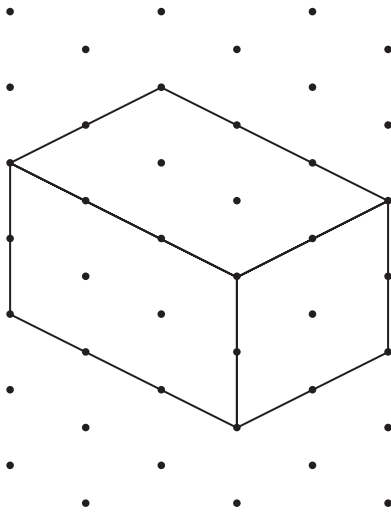
2. Find the total surface area of the outside of the tank. It has an open top.



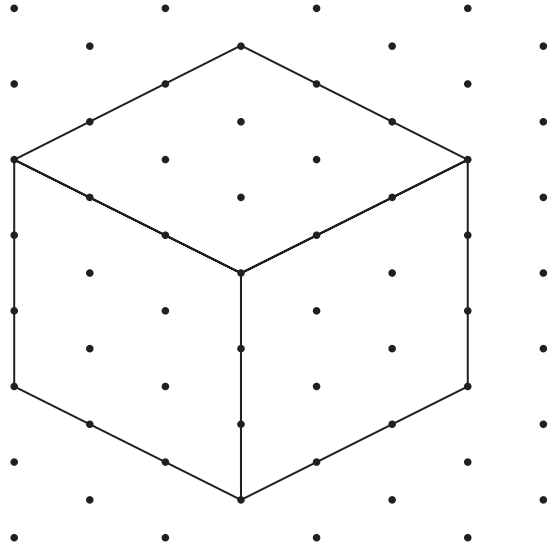
- (A) 180 in.<sup>2</sup>                      (B) 666 in.<sup>2</sup>  
(C) 1,116 in.<sup>2</sup>                      (D) 1,332 in.<sup>2</sup>

3. Which of these has edges that are 3 times as long as a unit cube?

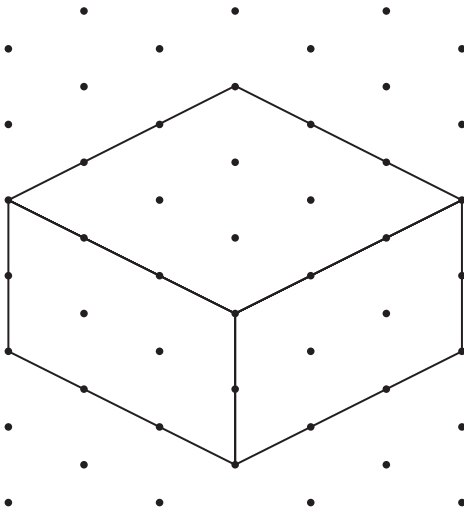
(A)



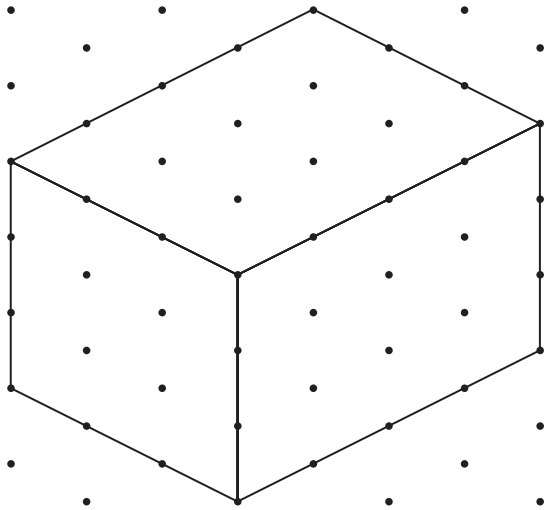
(B)



(C)



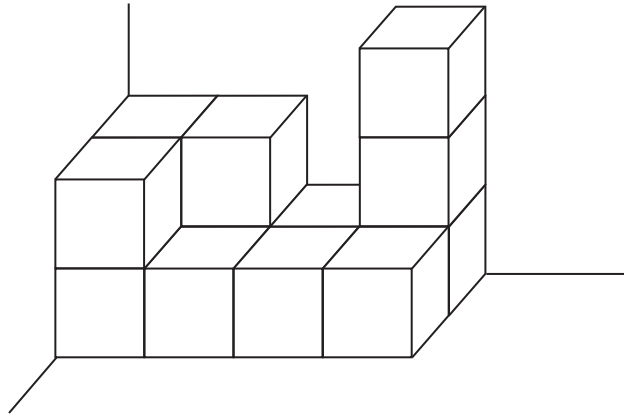
(D)



Name: \_\_\_\_\_

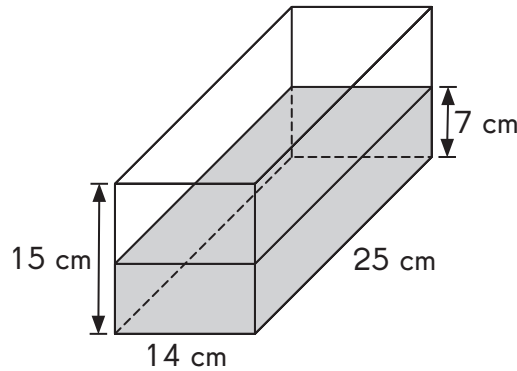
Date: \_\_\_\_\_

4. The solid is made up of cubes that have edges that measure 2 centimeters. What is the volume of the solid?



- (A)  $11 \text{ cm}^3$                       (B)  $13 \text{ cm}^3$   
(C)  $88 \text{ cm}^3$                       (D)  $104 \text{ cm}^3$

5. A tank has water in it at a height of 7 centimeters. How much more water is needed to fill the tank to the brim?

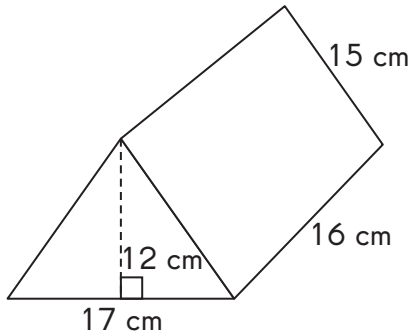


- (A) 2.45 L                      (B) 2.8 L  
(C) 5.25 L                      (D) 6.1 L

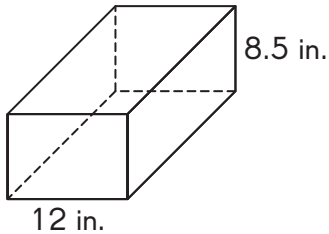


**Complete.**

8. Find the total surface area of the triangular prism.



9. The length of a rectangular block of wood is twice its width. The width of the block of wood is 12 inches. Find the volume of the block of wood.



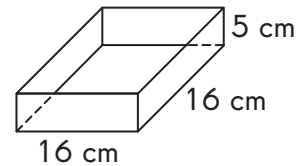
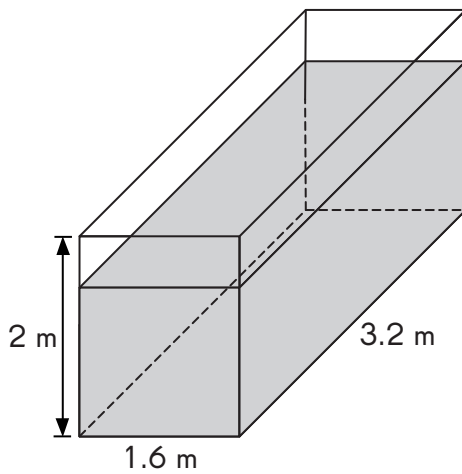
10. A rectangular container has sides that measure 9 centimeters by 12 centimeters by 23 centimeters. Joan filled the container to its brim with water. How much water must she pour out of the container so that only  $\frac{2}{3}$  of the volume of water is left in the container? Give your answer in milliliters.

**Extended Response**

(Question 11: 2 points, Question 12: 3 points)

**Solve. Show your work.**

11. A tank is  $\frac{3}{4}$ -filled with water. Water from the tank is used to fill smaller containers. Each small container has a square base with edges that measure 16 centimeters each, and a height of 5 centimeters. How many small containers can the water from the tank fill?



Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Solve. Show your work.**

- 12.** A tank measures 30 centimeters by 30 centimeters by 50 centimeters. It is filled with water from a tap that flows at a rate of 6 liters per minute. How long would it take to fill  $\frac{4}{5}$  of the tank with water? Give your answer in minutes and seconds.