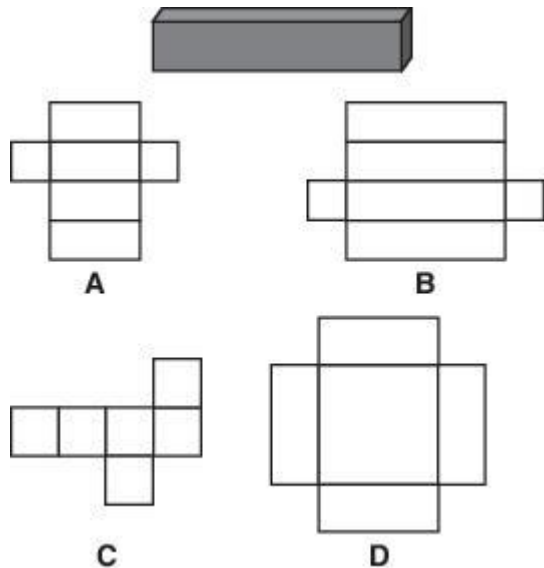


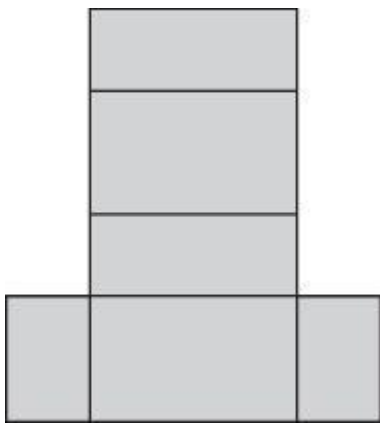
**Directions:** Please choose the best answer choice for each of the following questions.

1. Below is a drawing of a three-dimensional object. Choose the best representation of its net.



- A. A
- B. B
- C. C
- D. D

2. Which three-dimensional shape does the net below best represent?



- A. Cube
- B. Rectangular prism
- C. Triangular prism
- D. Rectangular pyramid

3. A certain solid figure has 8 vertices and 12 edges. Which of the following figures does this describe?

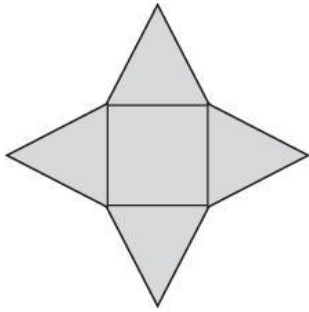
- A. an octagonal pyramid
- B. an octagonal prism
- C. a square pyramid
- D. a square prism

4. By making 1 cut across the diagonals of the fabric, what shapes are possible?



- A. 1 rectangle and 2 triangles
- B. 1 square and 1 triangle
- C. 2 rectangles
- D. 2 triangles

5. Maxine has combined four triangles and one square that she cut from paper.



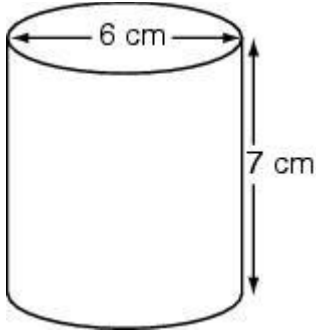
Which of the following figures could she make?

- A. cone
- B. cube
- C. hexagonal prism
- D. rectangular pyramid

6. Jordan is lining the interior of a rectangular flower box with plastic. There is no top. The box is 6 in. high, 3 ft long, and 2 ft wide. How many square feet of plastic will Jordan need?

- A. 3
- B. 11
- C. 17
- D. 60

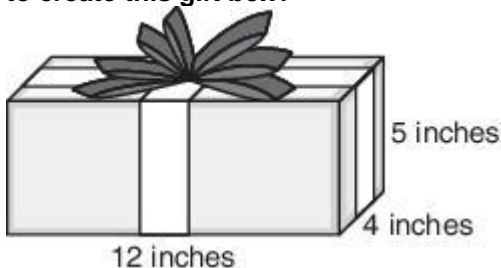
7. The dimensions of a cylinder are given below.



What is the surface area of the cylinder in square centimeters?

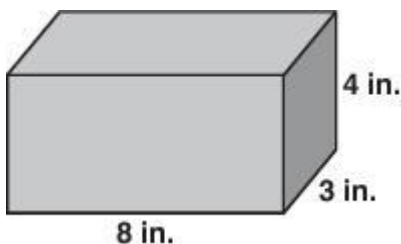
- A. 42
- B. 51
- C. 60
- D. 84

8. If Gary added the areas of all the faces in this figure, what would be the minimum amount of cardboard used to create this gift box?



- A. 48 in.<sup>2</sup>
- B. 60 in.<sup>2</sup>
- C. 128 in.<sup>2</sup>
- D. 256 in.<sup>2</sup>

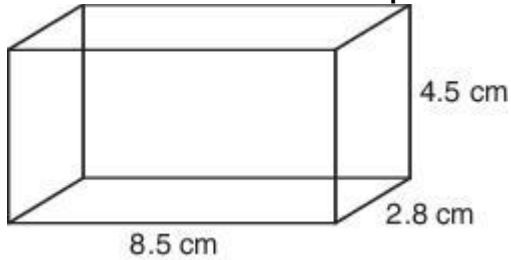
9. Joe is making a jewelry box in shop class. He wants to wrap the box as a gift for his friend.



Which expression should Joe use to find out approximately how many square inches of gift-wrap he will need?

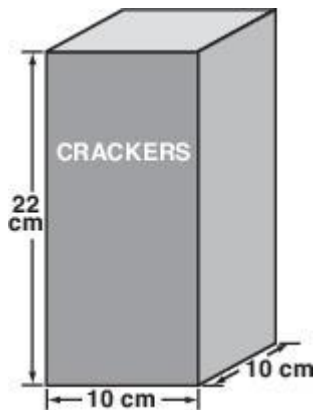
- A.  $2(8 \times 3 \times 4)$
- B.  $8 + 3 + 4$
- C.  $2 \times 8 \times 3 + 2 \times 3 \times 4 + 2 \times 8 \times 4$
- D.  $8 \times 3 + 3 \times 4 + 8 \times 4$

10. What is the volume of the prism?



- A.  $15.8 \text{ cm}^3$
- B.  $28.3 \text{ cm}^3$
- C.  $107.1 \text{ cm}^3$
- D.  $214.2 \text{ cm}^3$

11. The Chip 'n Dip Company designs a box for crackers that is 10 cm long by 10 cm wide by 22 cm high. Each cracker is 4.6 cm by 4.6 cm. The company would also like to make a smaller box with half the capacity.



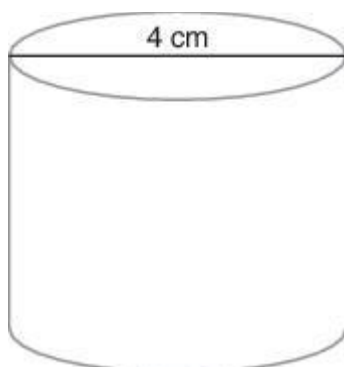
Which of the following box dimensions would hold the crackers and have half the capacity?

- A.  $4 \text{ cm} \times 11 \text{ cm} \times 20 \text{ cm}$
- B.  $5 \text{ cm} \times 5 \text{ cm} \times 22 \text{ cm}$
- C.  $5 \text{ cm} \times 5 \text{ cm} \times 11 \text{ cm}$
- D.  $5 \text{ cm} \times 10 \text{ cm} \times 22 \text{ cm}$

12. Francesca is designing centerpieces to put on dining tables at a party. She wants to use stacks of small cubes as the base for these decorations. She originally ordered cubes without seeing the size of the dining tables. Now that she has seen the tables, she wants to change her order. She requests cubes that have double the length, width, and height of the original cubes. How much more space will these new cubes take up?

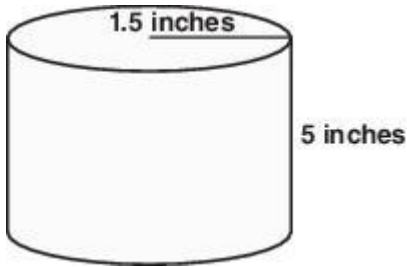
- A. 2 times as much space
- B. 4 times as much space
- C. 6 times as much space
- D. 8 times as much space

13. Consider the given cylinder. If the diameter of the bases is doubled, what effect does this have on the volume?



- A. Volume is multiplied by  $\frac{1}{2}$
- B. Volume is multiplied by 2
- C. Volume is multiplied by  $\frac{1}{4}$
- D. Volume is multiplied by 4

14. The Jefferson Food Company uses this cylinder to package its strawberry jam.



For a special promotion, the company wants to market a cylinder that has twice as much strawberry jam as the cylinder above. Which dimensional change will allow the company to achieve its goal?

- A. double the radius
- B. double the height
- C. double the diameter
- D. double both the radius and height

15. Ryan needs to compute the total volume of 50 identical cubic storage boxes. He quickly measures an edge of one cube as 20 inches and computes the total volume of the 50 boxes based on this measurement. If the actual measurement of each edge is 21 inches, by how much has he underestimated the total volume of the 50 boxes as a result of his measurement error?

- A. 150 cubic inches
- B. 1,261 cubic inches
- C. 63,050 cubic inches
- D. 463,050 cubic inches

**Stop! You have finished this exam.**