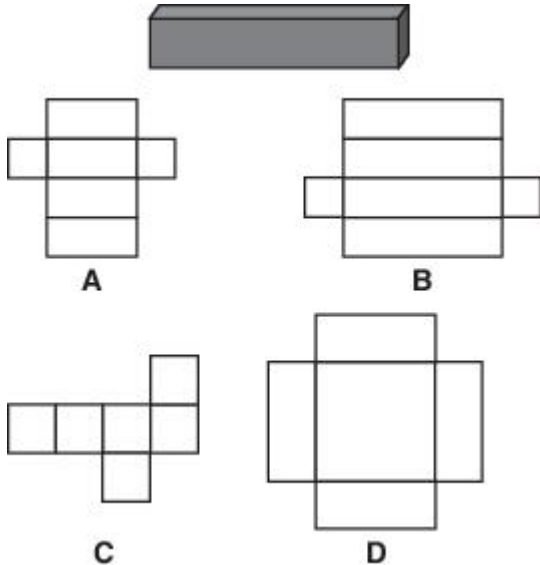


Directions: Please choose the best answer choice for each of the following questions.

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



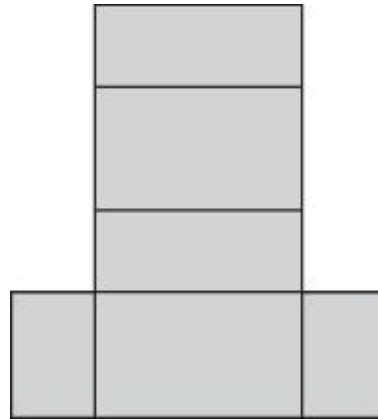
- A. A
- B. B
- C. C
- D. D

Answer Choice Rationale

- A. No rationale available
- B. Correct
- C. No rationale available
- D. No rationale available

ItemID A2KC.1107394
 Correct B
 Standard(s) MA.9-12.MA.912.G.7.1

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



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

Answer Choice Rationale

- A. No rationale available
- B. Correct
- C. No rationale available
- D. No rationale available

ItemID A2KC.1087449
 Correct B
 Standard(s) MA.9-12.MA.912.G.7.1

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

Answer Choice Rationale

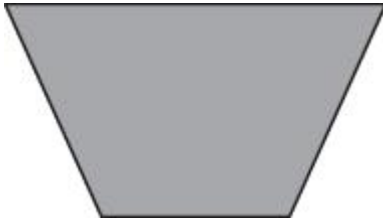
- A. No rationale available
- B. No rationale available
- C. No rationale available

Go on to the next page »

D. Correct

ItemID A2KC.1112628
 Correct D
 Standard(s) MA.9-12.MA.912.G.7.1

4. Megan has a trapezoid-shaped piece of material. If she makes 1 cut across the fabric, what shapes are possible?



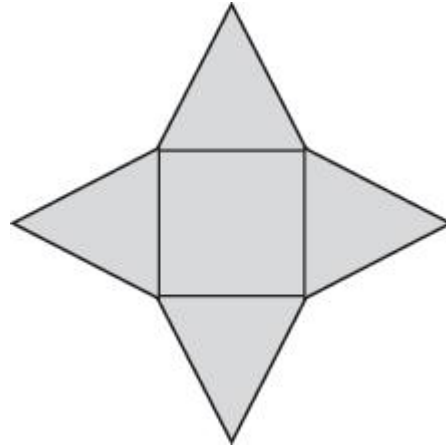
- A. 1 rectangle and 2 triangles
- B. 1 square and 1 triangle
- C. 2 rectangles
- D. 2 triangles

Answer Choice Rationale

- A. No rationale available
- B. No rationale available
- C. No rationale available
- D. Correct

ItemID A2KC.1112903
 Correct D
 Standard(s) MA.9-12.MA.912.G.7.1

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

Answer Choice Rationale

- A. No rationale available
- B. No rationale available
- C. No rationale available
- D. Correct

ItemID A2KC.1112905
 Correct D
 Standard(s) MA.9-12.MA.912.G.7.1

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

Answer Choice Rationale

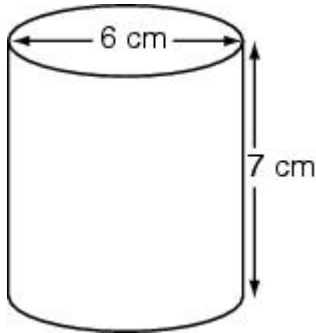
- A. No rationale available
- B. Correct
- C. No rationale available

Go on to the next page »

D. No rationale available

ItemID A2KC.1132303
 Correct B
 Standard(s) MA.9-12.MA.912.G.7.5

7. The dimensions of a cylinder are given below.



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

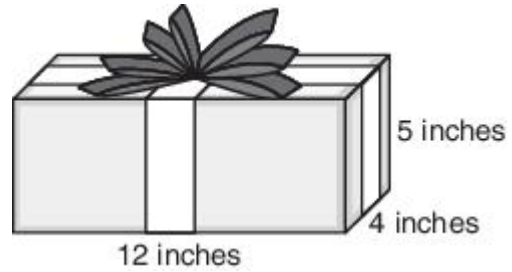
- A. 42
- B. 51
- C. 60
- D. 84

Answer Choice Rationale

- A. No rationale available
- B. No rationale available
- C. Correct
- D. No rationale available

ItemID A2K.1021097
 Correct C
 Standard(s) MA.9-12.MA.912.G.7.5

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?



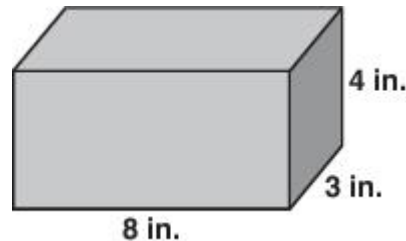
- A. 48 in.²
- B. 60 in.²
- C. 128 in.²
- D. 256 in.²

Answer Choice Rationale

- A. This is the area of only one face measuring 12 inches by 4 inches.
- B. This is the area of only one face measuring 12 inches by 5 inches.
- C. This answer finds the area of each face, but does not multiply this by 2 because there are 2 faces with each set of dimensions.
- D. Correct answer.

ItemID A2K.1012065
 Correct D
 Standard(s) MA.9-12.MA.912.G.7.5

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. $8 \times 3 + 3 \times 4 + 8 \times 4$

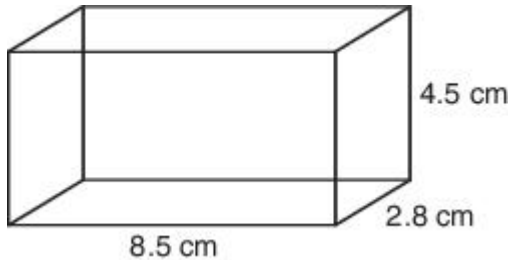
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Answer Choice Rationale

- A. This answer multiplies the 3 dimensions instead of multiplying each pair of 2 dimensions to find the area of each face.
- B. This answer adds the 3 dimensions.
- C. Correct answer.
- D. This answer does not multiply the area of each face by 2.

ItemID A2K.1011577
 Correct C
 Standard(s) MA.9-12.MA.912.G.7.5

10. What is the volume of the prism?



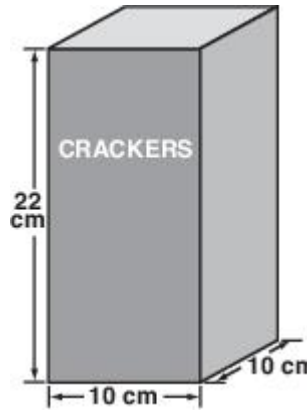
- A. 15.8 cm^3
- B. 28.3 cm^3
- C. 107.1 cm^3
- D. 214.2 cm^3

Answer Choice Rationale

- A. No rationale available
- B. No rationale available
- C. Correct
- D. No rationale available

ItemID A2KC.1107432
 Correct C
 Standard(s) MA.9-12.MA.912.G.7.5

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. $5 \text{ cm} \times 10 \text{ cm} \times 22 \text{ cm}$

Answer Choice Rationale

- A. the 4.6 cracker wouldn't fit
- B. simply cut the base of the box in half
- C. cut everything in half
- D. correct response

ItemID A2K.1012115
 Correct D
 Standard(s) MA.9-12.MA.912.G.7.7

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

Answer Choice Rationale

Go on to the next page »

- A. No rationale available
- B. No rationale available
- C. No rationale available
- D. Correct

ItemID A2K.1020001
 Correct D
 Standard(s) MA.9-12.MA.912.G.7.7

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



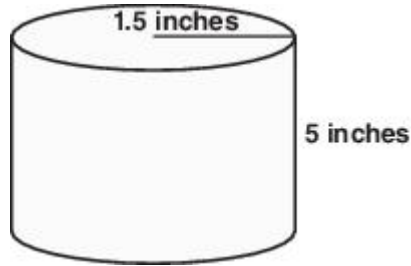
- A. Volume is multiplied by $\frac{1}{2}$.
- B. Volume is multiplied by 2.
- C. Volume is multiplied by $\frac{1}{4}$.
- D. Volume is multiplied by 4.

Answer Choice Rationale

- A. No rationale available
- B. No rationale available
- C. No rationale available
- D. Correct

ItemID A2KC.1107382
 Correct D
 Standard(s) MA.9-12.MA.912.G.7.7

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

Answer Choice Rationale

- A. If the radius is doubled, the volume will quadruple instead of double.
- B. Correct answer.
- C. If the diameter is doubled, the volume will quadruple instead of double.
- D. If the radius and the height double, the volume will increase by a factor of 8 instead of 2.

ItemID A2K.1012212
 Correct B
 Standard(s) MA.9-12.MA.912.G.7.7

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

Answer Choice Rationale

Go on to the next page »

- This answer mistakes the error as being equal to 3×50 because there are 50 boxes and the length, width, and height are each incorrect by 1 inch.
- A. length, width, and height are each incorrect by 1 inch.
 - B. This is the error for one box instead of for all 50 boxes.
 - C. Correct answer.
 - D. This is the total volume of the 50 boxes.

<p>ItemID A2K.1113509 Correct C Standard(s) MA.9-12.MA.912.G.7.7</p>
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