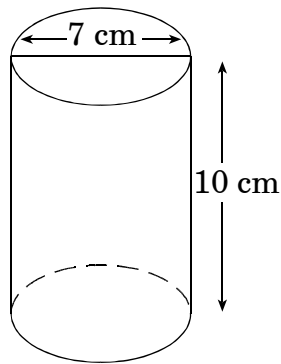


1. If the length of a rectangle is doubled, what will happen to its area?
- A The area will be the same.
- B The area will be twice as large.
- C The area will be three times as large.
- D The area will be four times as large.
2. The diagram below shows a company's current packaging of its plant food.



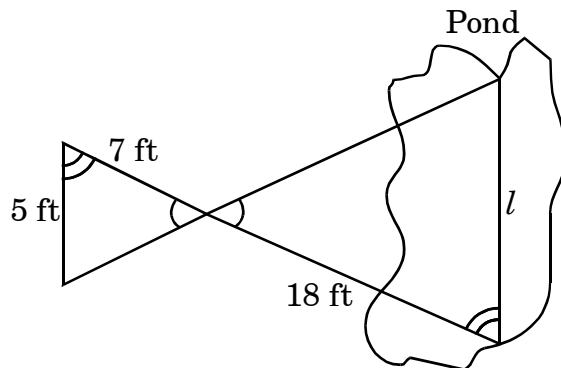
The company will double the radius but keep the height the same. What effect will this change have on the volume of the container?

- A The new volume will be one and a half times the original volume.
- B The new volume will be twice the original volume.
- C The new volume will be three times the original volume.
- D The new volume will be four times the original volume.

3. A hole shaped like a rectangular prism is 3 feet wide, 5 feet long, and 3 feet deep. If the hole is made 2 feet deeper, by how much will the volume of the hole increase?
- A 30 cubic feet
- B 75 cubic feet
- C 90 cubic feet
- D 130 cubic feet
4. A  $5 \times 7$  photo is enlarged so that its new dimensions are  $10 \times 14$ . How does the area of the enlarged photo compare to the area of the original photo?
- A The area of the enlarged photo is five square units larger than the area of the original photo.
- B The area of the enlarged photo is seven square units larger than the area of the original photo.
- C The area of the enlarged photo is two times the area of the original photo.
- D The area of the enlarged photo is four times the area of the original photo.

5. The side measurements of a cube are tripled. What is the ratio of the surface area of the original cube to the surface area of the larger one?
- A 1 : 3  
B 1 : 6  
C 1 : 9  
D 1 : 12
6. At noon, the shadow of a flagpole is 19 feet long. At the same time, the shadow of a 12-foot-high wall is 4 feet long. What is the height of the flagpole?
- A 48 feet  
B 57 feet  
C 62 feet  
D 75 feet
7. Marissa's shadow is 8 feet long, and she is 5.5 feet tall. At the same time of day, a building casts a 20-foot shadow. Which proportion can be used to find the height,  $x$ , of the building?
- A  $\frac{x}{8} = \frac{5.5}{20}$   
B  $\frac{x}{20} = \frac{5.5}{8}$   
C  $\frac{x}{12} = \frac{5.5}{8}$   
D  $\frac{x}{5.5} = \frac{12}{8}$

8. Jake wanted to measure the length,  $l$ , of the pond, so he drew this diagram of two similar triangles.



What is the **approximate** length,  $l$ , of the pond?

- A 25 feet
- B 19 feet
- C 18 feet
- D 13 feet

### End of Goal 2 Sample Items

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## Math Goal 2

### Sample Items Key Report

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- 1 Objective: 2.01**  
Determine the effect on perimeter, area or volume when one or more dimensions of two- and three-dimensional figures are changed.  
**Thinking Skill:** Applying **Correct Answer:** B
- 2 Objective: 2.01**  
Determine the effect on perimeter, area or volume when one or more dimensions of two- and three-dimensional figures are changed.  
**Thinking Skill:** Analyzing **Correct Answer:** D
- 3 Objective: 2.01**  
Determine the effect on perimeter, area or volume when one or more dimensions of two- and three-dimensional figures are changed.  
**Thinking Skill:** Applying **Correct Answer:** A
- 4 Objective: 2.01**  
Determine the effect on perimeter, area or volume when one or more dimensions of two- and three-dimensional figures are changed.  
**Thinking Skill:** Applying **Correct Answer:** D
- 5 Objective: 2.01**  
Determine the effect on perimeter, area or volume when one or more dimensions of two- and three-dimensional figures are changed.  
**Thinking Skill:** Applying **Correct Answer:** C
- 6 Objective: 2.02**  
Apply and use concepts of indirect measurement.  
**Thinking Skill:** Applying **Correct Answer:** B
- 7 Objective: 2.02**  
Apply and use concepts of indirect measurement.  
**Thinking Skill:** Applying **Correct Answer:** B
- 8 Objective: 2.02**  
Apply and use concepts of indirect measurement.  
**Thinking Skill:** Integrating **Correct Answer:** D