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.

   ![Diagram](image)

   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 × 7 photo is enlarged so that its new dimensions are 10 × 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.

![Diagram of two similar triangles with measurements 5 ft, 7 ft, 18 ft, and unknown length \( l \).]

What is the \textbf{approximate} length, \( l \), of the pond?

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

**End of Goal 2 Sample Items**

In compliance with federal law, including the provisions of Title IX of the Education Amendments of 1972, the Department of Public Instruction does not discriminate on the basis of race, sex, religion, color, national or ethnic origin, age, disability, or military service in its policies, programs, activities, admissions or employment.
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