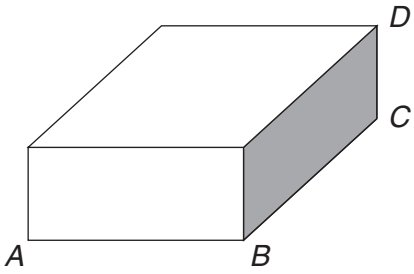
Name _____ Date _____ Class _____

GRADE 10

Focus on Sunshine State Standards: Benchmark Tests

MA.912.G.7.5 Benchmark Pre-Test (Multiple Choice)

Use the prism for problems 1–3.



1. In the rectangular prism, length $AB = 6$ centimeters, width $BC = 12$ centimeters, and height $DC = 3$ centimeters. What is the volume of the prism? ($V = lwh$)

A. 21 cubic centimeters

B. 72 cubic centimeters

C. 216 cubic centimeters

D. 252 cubic centimeters

2. What is the lateral area of the rectangular prism? ($L.A. = 2(hw) + 2(lh)$)

F. 252 square centimeters

G. 180 square centimeters

H. 108 square centimeters

I. 54 square centimeters

3. What is the surface area of the rectangular prism? ($S.A. = 2(lw) + 2(hw) + 2(lh)$)

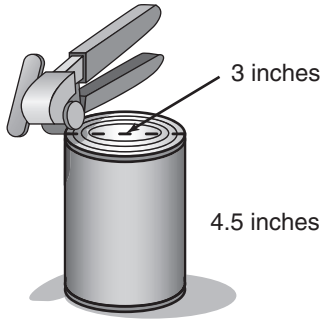
A. 126 square centimeters

B. 180 square centimeters

C. 216 square centimeters

D. 252 square centimeters

Use the can for problems 4–6.



4. Soup is packed in a cylindrical can with dimensions shown in the drawing. What is the approximate volume of the soup can? ($V = \pi r^2 h$. Use 3.14 for pi.)

F. 127 cubic inches

G. 42 cubic inches

H. 32 cubic inches

I. 7 cubic inches

5. What is the approximate lateral area of the soup can? ($L.A. = 2\pi rh$, Use 3.14 for pi.)

A. 42 square inches

B. 57 square inches

C. 63 square inches

D. 85 square inches

6. What is the approximate surface area of the soup can? ($S.A. = 2\pi rh + 2\pi r^2$. Use 3.14 for pi.)

F. 141 square centimeters

G. 64 square centimeters

H. 57 square centimeters

I. 49 square centimeters

Name _____ Date _____ Class _____

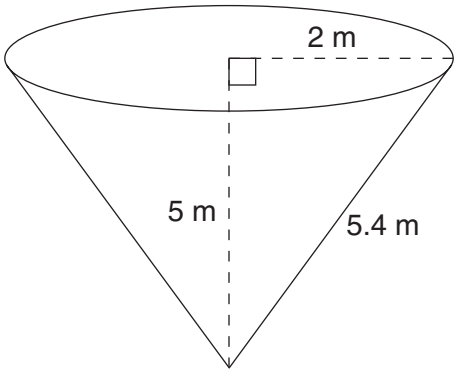
GRADE 10

Focus on Sunshine State Standards: Benchmark Tests

MA.912.G.7.5 Benchmark Pre-Test (Gridded Response)

Use the Gridded Response Answer Sheet.

Use the diagram for problems 7–9.



7. Approximately how many cubic meters of grain can the conical grain bin hold? Round to the nearest cubic meter.
($V = \frac{1}{3}\pi r^2 h$. Use 3.14 for pi.)

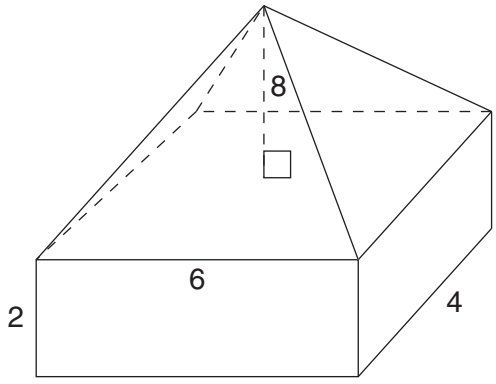
8. The grain bin is made of metal and is uncovered. How many square meters of metal make up the grain bin? Round to the nearest square meter.
($L.A. = \pi rl$. Use 3.14 for pi.)

9. Suppose the grain bin is fitted with a metal cover. How many square meters of metal make up the grain bin and cover together? Round to the nearest square meter.
($S.A. = \pi rl + \pi r^2$. Use 3.14 for pi.)

10. A balloon for a parade is being sewn from a special form of spandex. If the balloon will be in the shape of a sphere with a diameter of 15 feet, about how much spandex is required to make the balloon? Round to the nearest square foot. ($S.A. = 4\pi r^2$)

11. If the edge of a cube is 4 centimeters and the edge of a larger cube is 6 centimeters, what is the difference in the volumes of the two cubes in cubic centimeters?

12. The figure is a rectangular prism topped by a pyramid.



What is the volume of the figure in cubic units?