

GRADE

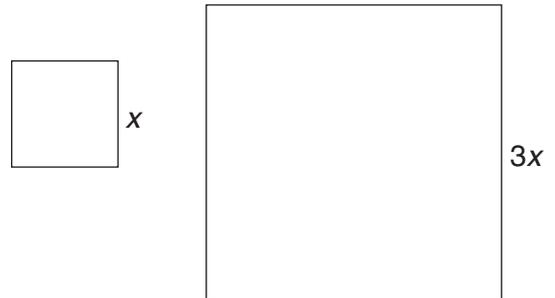
**10****Focus on Sunshine State Standards: Benchmark Tests****MA.912.G.7.7 Benchmark Pre-Test (Multiple Choice)**

Use the information for problems 1 and 2.

Rebecca's old rectangular suitcase is 12 inches wide, 20 inches long, and 6 inches tall. Her new suitcase has dimensions that are double those of her old one.

1. By how much did the volume of her suitcase increase?
  - A. 2 times
  - B. 4 times
  - C. 6 times
  - D. 8 times
2. By how much did the surface area of her suitcase increase?
  - F. 8 times
  - G. 6 times
  - H. 4 times
  - I. 2 times
3. A rectangular prism has a volume of 48 cubic inches. If the length, width, and height are all changed to half their original size, what will be the new volume of the rectangular prism?
  - A. 6 cubic inches
  - B. 8 cubic inches
  - C. 12 cubic inches
  - D. 24 cubic inches

Use the diagram for problems 4 and 5.

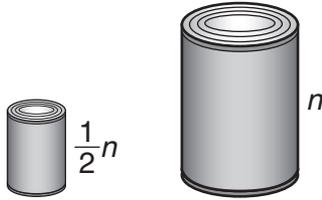


4. The figures shown represent the faces of two cubes. If Paulo knows the volume of the smaller cube on the left, how can he find the volume of the cube on the right?
  - F. Multiply the smaller cube's volume by 27.
  - G. Multiply the smaller cube's volume by 9.
  - H. Multiply the smaller cube's volume by 3.
  - I. Cube the smaller cube's volume.
5. Paulo also knows the surface area of the smaller cube on the left. How can he find the surface area of the cube on the right?
  - A. Square the smaller cube's surface area.
  - B. Multiply the smaller cube's surface area by 3.
  - C. Multiply the smaller cube's surface area by 6.
  - D. Multiply the smaller cube's surface area by 9.

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Use the drawing for problems 6–7.



6. The dimensions of the smaller cylindrical soup can are  $\frac{1}{2}$  the measure of the dimensions of the larger can. If the surface area of the larger can is  $48\pi$  square inches, what is the surface area of the smaller can?
- F.  $24\pi$  cubic inches  
G.  $12\pi$  cubic inches  
H.  $6\pi$  cubic inches  
I.  $4\pi$  cubic inches
7. If the volume of the larger can is  $40\pi$  cubic inches, what is the volume of the smaller can?
- A.  $5\pi$  cubic inches  
B.  $6.7\pi$  cubic inches  
C.  $10\pi$  cubic inches  
D.  $20\pi$  cubic inches
8. A glass paperweight shaped like a pyramid has a volume of 4 cubic centimeters. What is the volume of a similarly shaped paperweight if each dimension is three times as large as the smaller paperweight?
- F. 108 cubic centimeters  
G. 64 cubic centimeters  
H. 36 cubic centimeters  
I. 12 cubic centimeters
9. The radius of a sphere-shaped balloon is 3 times the radius of a smaller sphere-shaped balloon. If the surface area of the larger balloon is  $324\pi$  square inches, what is the surface area of the smaller balloon?
- A.  $36\pi$  square inches  
B.  $54\pi$  square inches  
C.  $108\pi$  square inches  
D.  $2,916\pi$  square inches
10. If the surface area of a cube is increased by a factor of 4, what is the change in the length of a side of the cube?
- F. The length is 16 times the original length.  
G. The length is 4 times the original length.  
H. The length is 2 times the original length.  
I. The length is half the original length.