Chapter 8 Review

For all questions, round your answer to the nearest tenth of a unit when necessary.

8.1 Apply the Pythagorean Theorem, pages 418–425

1. Find the length of each indicated side.
   a) 
   \[
   a = 7.2 \text{ cm}
   \]
   b) 
   \[
   1.4 \text{ cm}
   \]
   \[
   2.7 \text{ cm}
   \]

2. Find the area of this triangle.
   \[
   5.4 \text{ cm} \quad 4.2 \text{ cm}
   \]

8.2 Perimeter and Area of Composite Figures, pages 426–435

3. Find the perimeter and area of each figure.
   a) 
   \[
   4 \text{ cm} \quad 4 \text{ cm}
   \]
   \[
   8 \text{ cm} \quad 12 \text{ cm}
   \]
   \[
   16 \text{ cm}
   \]
   b) 
   \[
   2 \text{ m}
   \]
   \[
   4 \text{ m}
   \]
   \[
   2 \text{ m}
   \]

4. A sun deck is 4 m x 4 m x 2 m. It is 1 m wide. What is the area of the deck?

8.3 Surface Area and Volume of Prisms and Pyramids, pages 436–443

5. Find the surface area and volume of each object.
   a) 
   \[
   12 \text{ cm} \quad 13 \text{ cm}
   \]
   b) 
   \[
   8.5 \text{ cm}
   \]
   \[
   6 \text{ cm}
   \]
   \[
   9 \text{ cm}
   \]

6. Find the side length of each cube,
   a) a cube with volume 3375 cm³
   b) a cube with surface area 864 cm²

8.4 Surface Area of a Cone, pages 444–450

7. Calculate the surface area of each cone.
   a) 
   \[
   8.1 \text{ cm}
   \]
   \[
   9 \text{ cm}
   \]
   \[
   5.6 \text{ cm}
   \]
   \[
   1.8 \text{ cm}
   \]

8. Find the surface area of this frustum.
   \[
   1 \text{ cm}
   \]
   \[
   2 \text{ cm}
   \]
   \[
   2.4 \text{ cm}
   \]

8.5 Volume of a Cone, pages 451–456

9. Find the volume of each cone.
   a) 
   \[
   7 \text{ cm}
   \]
   \[
   6 \text{ cm}
   \]

10. Find the volume of the largest cone that fits inside a cube with edges 15 cm long.

8.6 Surface Area of a Sphere, pages 457–461
11. Find the surface area of each sphere.
   a)  
   ![Diagram with a sphere and a radius of 6.5 cm]
   
   b)  
   ![Diagram with a sphere and a radius of 10.2 cm]

12. The surface area of this hemisphere is 1062 cm². What is its radius?
   ![Diagram of a hemisphere]

8.7 Volume of a Sphere, pages 462–469

13. Find the volume of each sphere.
   a)  
   ![Diagram with a sphere and a radius of 2 cm]
   
   b)  
   ![Diagram with a sphere and a radius of 2 cm]

14. Which has greater volume?
   A  a hemisphere with radius 12 cm
   B  a sphere with radius 8 cm
   How do you know?