

Chapter 1 review

For questions 1 and 2, choose the correct answer: A, B, C, or D

1. Which expression would you use to calculate the lateral area of a right cone?

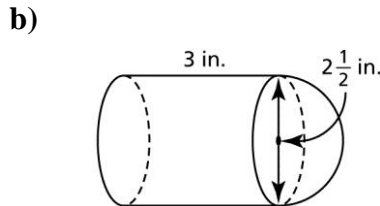
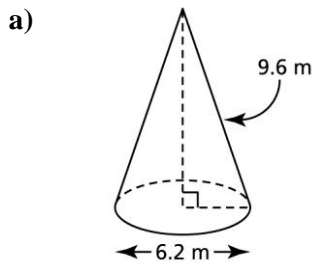
- A. $\pi r^2 + \pi rs$ B. πdh C. $\frac{1}{3}\pi r^2 h$ D. πrs

2. Which equation could you *not* use to convert 5 in. to centimetres?

- A. $5 \text{ in.} = 5 \times 2.5 \text{ cm}$ B. $\frac{x}{5} = \frac{2.5}{1}$
- C. $\frac{x}{5} = \frac{1}{2.5}$ D. $5 \text{ in.} = 5 \text{ in.} \times \frac{2.5 \text{ cm}}{1 \text{ in.}}$

3. Determine the surface area and volume of each object.

Give your answers to the nearest unit.

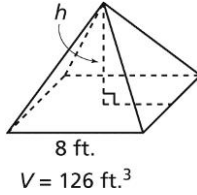


4. A right prism and a right pyramid have the same base and the same height. Explain how their volumes are related.
5. The surface area of a sphere is 137.5 cm^2 . What is the radius of the sphere to the nearest tenth of a centimetre?
6. The volume of a right square pyramid is 126 cubic feet. The side length of the base is 8 ft.
- Sketch the pyramid.
 - Determine the height of the pyramid to the nearest foot.
 - What is the slant height of the pyramid to the nearest foot?
7. A student wants to determine the dimensions of the floor of his bedroom.
- Explain how the student could estimate the dimensions of his bedroom.
 - Which unit is most appropriate to measure the dimensions? Explain.
 - Which measuring device could the student use to check his estimate? Justify your choice.
8. Nakkita used a pedometer to count the number of steps she took on her morning walk. At the end of her walk, the pedometer had recorded 4498 steps.
- Nakkita's typical step length when walking is 0.7 m. To the nearest mile, how far did Nakkita walk?
 - Use unit analysis to verify the conversion.

Answers

1. D 2. C
3. a) 124 m^2 ; 91 m^3
b) 38 in.^2 ; 19 in.^3
4. The volume of a right prism is 3 times the volume of a right pyramid with the same base and same height.
5. 3.3 cm

6. a) b) 6 ft. c) 7 ft.



7. Answers will vary.
a) Since the length of a human foot is about the length of an imperial foot, the student could estimate the dimensions of the floor by walking, heel to toe, along the length and width, and counting his feet units.
b) The most appropriate unit is feet (and inches) because the dimensions of construction materials and carpeting are reported in imperial units.
c) The student could use a measuring tape because it is long enough that he can make one measure for length and one measure for width. If the student were to use a ruler or metre stick, he would have to take several measures, then add them.
8. a) About 2 mi.
b) $3148.6 \text{ m} \times \frac{1 \text{ km}}{1000 \text{ m}} \times \frac{1 \text{ mi.}}{1.6 \text{ km}} \doteq 2 \text{ mi.}$