Lesson 17 Practice Problems

1. A cylinder has a volume of 48π cm^3 and height h. Complete this table for volume of cylinders with the same radius but different heights.

height (cm)	volume (cm^3)
h	48π
$2h$	
$5h$	
$\frac{h}{2}$	
$\frac{h}{5}$	

2. A cylinder has a radius of 3 cm and a height of 5 cm.

   a. What is the volume of the cylinder?

   b. What is the volume of the cylinder when its height is tripled?

   c. What is the volume of the cylinder when its height is halved?

3. A graduated cylinder that is 24 cm tall can hold 1 L of water. What is the radius of the cylinder? What is the height of the 500 ml mark? The 250 ml mark? Recall that 1 liter (L) is equal to 1000 milliliters (ml), and that 1 liter (L) is equal to 1,000 cm^3.

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4. An ice cream shop offers two ice cream cones. The waffle cone holds 12 ounces and is 5 inches tall. The sugar cone also holds 12 ounces and is 8 inches tall. Which cone has a larger radius?

(From Unit 5, Lesson 16.)

5. A 6 oz paper cup is shaped like a cone with a diameter of 4 inches. How many ounces of water will a plastic cylindrical cup with a diameter of 4 inches hold if it is the same height as the paper cup?

(From Unit 5, Lesson 15.)

6. Lin's smart phone was fully charged when she started school at 8:00 a.m. At 9:20 a.m., it was 90% charged, and at noon, it was 72% charged.

   a. When do you think her battery will die?

   b. Is battery life a function of time? If yes, is it a linear function? Explain your reasoning.

(From Unit 5, Lesson 9.)

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