ML8 Chapter 7 Problems of the Week Answers

BLM 7–4 Chapter 7 Problems of the Week

1. Neither shape will require more paint. Both will require 288 cm^2 of paint to cover.

2. In a right triangular prism, any pair of opposite faces can be referred to as the bases, since they are congruent. A right triangular prism has two different uses of the words *base* and *height*. The triangular ends of the prism are referred to as bases of the prism. The height of the prism is the distance between the triangular bases. The other use of base refers to the actual triangles themselves, which have base and height measurements.

3. Students can measure the diameter (and calculate the radius), or calculate the radius from the circumference of the circle.

a) The cylinder with a height of 28 cm has a volume of 1040.9 cm^3. The cylinder with a height of 21.6 cm has a volume of 1349.1 cm^3.

b) Students may be surprised that the cylinder with the shorter height had a greater volume. Explanations will vary. Ask the following questions: Is this always true? Does a shorter side on a piece of paper when rolled into a cylinder always have more volume than a longer side? When would the cylinders be of equal volume?

4. (8 cm × 9 cm × 10 cm) − (4 cm × 4.5 cm × 5 cm) = 720 cm^3 − 90 cm^3 = 630 cm^3. The volume not occupied by the solid block is 630 cm^3.

5. Total surface area = 2072.4 cm^2. She needs 6.4 containers of paint, which when rounded to a whole number, is 7 containers.

6. (1.5 m − 0.25 m) × 3 m × 4 m = 15 m^3; 15 m^3 ÷ 0.5 m^3 = 30. It will take 30 wheelbarrow loads to fill the planter.

Note: #1 and #5 are included as they require students to distinguish between area and volume.