Name: _____ Date: _____

BLM 6–10

Section 6.4 Investigate

Solve for a Variable Raised to an Exponent

A cylindrical storage container with volume 5000 m^3 has a radius equal to its height. The volume, V, is related to the radius, r, according to the equation $V = \pi r^3$. Determine the radius and height of the container to the nearest tenth of a metre.

1. a) What is the formula for the volume of a sphere?

b) Explain what each variable in the formula represents.
$V =$

$r =$

2. a) Do you think that you can use the given information and the formula to determine the:
- radius?
- height?

b) Explain why or why not.

3. a) Replace h in the volume formula with r. Explain why this can be done in this situation.

b) Use exponent laws to simplify the formula.

4. a) Use the given information and the formula from step 3 to solve for r. Explain your method.

b) What is the radius and height of the cylinder? Explain how you know.

978-0-07-013108-8