

Name: \_\_\_\_\_ Period: \_\_\_\_\_

## Classwork: Unit 5 Lesson 8

### Lesson 8: Speaking of Scaling

#### 8.3: Jumbo Can

A beverage company manufactures and fills juice cans. They spend  $0.04$  on materials for each can, and fill each can with  $0.27$  worth of juice.

The marketing team wants to make a jumbo version of the can that's a dilated version of the original. They can spend at most  $\$0.16$  on materials for the new can. There's no restriction on how much they can spend on the juice to fill each can. The team wants to make the new can as large as possible given their budget.

1. By what factor will the height of the can increase? Explain your reasoning.
2. By what factor will the radius of the can increase? Explain your reasoning.
3. Create drawings of the original and jumbo cans.
4. What geometric solid do the cans resemble? What are some possible differences between the geometric solid and the actual can?
5. What will be the total cost for materials and juice fill for the jumbo can? Explain or show your reasoning.
6. Describe any other factors that might cause the total cost to be different from your answer.