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NAME

DATE

PERIOD

## Cool Down

### Lesson 16: Minimizing Surface Area

#### Cool Down: Minimum Materials

A can manufacturing company is designing a can of cat food to hold 5.5 oz, or about  $163 \text{ cm}^3$ . They have written out that the equation for the surface area for a can with this volume is  $S = 2\pi r^2 + \frac{163}{r}$ . Explain why the equation is wrong and how to fix it.

Here are some formulas you may find useful for the volume  $V$  and surface area  $S$  of a cylinder with radius  $r$  and height  $h$ .

- $V = \pi r^2 h$
- $S = 2\pi r^2 + 2\pi r h$