

PROBLEM-OF-THE-DAY: ALGEBRA 1**WEEK:** November 5 to November 9**DAY:** Friday

RISD Objective: Given a problem which reflects proportional reasoning, students will write a proportion which models the situation and solve it.

PROBLEM #57

Carlos takes care of his family's swimming pool. He needs to add a liquid chemical called algaecide to prevent green algae growth. His pool has a 22,000 gallon capacity. The instructions on the algaecide bottle recommends $3\frac{1}{2}$ ounces for every 5,000 gallons of water.

- 1) How many ounces should Carlos add to the pool? Round to the next higher ounce.
- 2) If Carlos has 1 gallon (128 oz.) of the algaecide, how many times can Carlos treat for algae before he needs to buy another gallon?
- 3) Carlos applies the algaecide treatment every week for the pool season, about 16 weeks. How many gallons of algaecide should Carlos buy for the season?
- 4) If the algaecide cost \$48 per gallon, how much money will Carlos have to budget for algaecide for the season?



MODEL SOLUTION #57

1. I will set up the following problem to solve the problem:

$$\frac{3.5 \text{ ounces}}{5,000 \text{ gallons}} = \frac{x \text{ ounces}}{22,000 \text{ gallons}}$$

$$5,000x = (3.5)(22,000)$$

$$x = \frac{(3.5)(22,000)}{5,000} = 15.4 \text{ or } 16 \text{ ounces of algaecide per treatment.}$$

Carlos should use 16 oz. (1 pint) of algaecide per treatment

2. **128 total oz / 16 oz per treatment = 8 treatments.**
Carlos can expect to get 8 treatments per gallon of algaecide.
3. **16 treatments / 8 treatments per gallon = 2 gallons**
Carlos should plan on two gallons of algaecide per season.
4. **2 gallons X \$48 = \$96**
Carlos should budget \$96 for algaecide for the season.