

Name \_\_\_\_\_

Date \_\_\_\_\_

## Lesson 8: Using If-Then Moves in Solving Equations

### Exit Ticket

Mrs. Canale's class is selling frozen pizzas to earn money for a field trip. For every pizza sold, the class makes \$5.35. They have already earned \$182.90 toward their \$750 goal. How many more pizzas must they sell to earn \$750? Solve this problem first by using an arithmetic approach, then by using an algebraic approach. Compare the calculations you made using each approach.

## Exit Ticket Sample Solutions

Mrs. Canale's class is selling frozen pizzas to earn money for a field trip. For every pizza sold, the class makes \$5.35. They have already earned \$182.90, but they need \$750. How many more pizzas must they sell to earn \$750? Solve this problem first by using an arithmetic approach, then by using an algebraic approach. Compare the calculations you made using each approach.

**Arithmetic Approach:**

**Amount of money needed:**  $750 - 182.90 = 567.10$

**Number of pizzas needed:**  $567.10 \div 5.35 = 106$

*If the class wants to earn a total of \$750, then they must sell 106 more pizzas.*

**Algebraic Approach:**

*Let  $x$  represent the number of additional pizzas they need to sell.*

$$\begin{aligned} 5.35x + 182.90 &= 750 \\ 5.35x + 182.90 - 182.90 &= 750 - 182.90 \\ 5.35x + 0 &= 567.10 \\ \left(\frac{1}{5.35}\right)(5.35x) &= \left(\frac{1}{5.35}\right)(567.10) \\ x &= 106 \end{aligned}$$

OR

$$\begin{aligned} 5.35x + 182.90 &= 750 \\ 100(5.35x + 182.90) &= 100(750) \\ 535x + 18290 &= 75000 \\ 535x + 18290 - 18290 &= 75000 - 18290 \\ \left(\frac{1}{535}\right)(535x) &= \left(\frac{1}{535}\right)(56710) \\ x &= 106 \end{aligned}$$

*If the class wants to earn \$750, then they must sell 106 more pizzas.*

*Both approaches subtract 182.90 from 750 to get 567.10. Dividing by 5.35 is the same as multiplying by  $\frac{1}{5.35}$ . Both result in 106 more pizzas that the class needs to sell.*

## Problem Set Sample Solutions

Write and solve an equation for each problem.

1. The perimeter of a rectangle is 30 inches. If its length is three times its width, find the dimensions.

*The width of the rectangle:  $w$  inches*

*The length of the rectangle:  $3w$  inches*

**Perimeter = 2(length + width)**

$$2(w + 3w) = 30$$

$$2(4w) = 30$$

$$8w = 30$$

$$\left(\frac{1}{8}\right)(8w) = \left(\frac{1}{8}\right)(30)$$

$$w = 3\frac{3}{4}$$

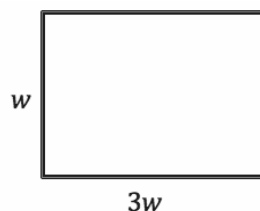
OR

$$2(w + 3w) = 30$$

$$(w + 3w) = 15$$

$$4w = 15$$

$$w = 3\frac{3}{4}$$



*The width is  $3\frac{3}{4}$  inches.*

*The length is  $(3)\left(3\frac{3}{4} \text{ in.}\right) = (3)\left(\frac{15}{4} \text{ in.}\right) = 11\frac{1}{4} \text{ in.}$*