## Exit Ticket Sample Solutions

1. **On a recent survey, $60\%$ of those surveyed indicated that they preferred walking to running.**

   a. **If $540$ people preferred walking, how many people were surveyed?**

   *Let $n$ represent the number of people surveyed.*

   *$0.60n$ is the number of people who preferred walking.*

   *Since $540$ people preferred walking,*

$$0.60n = 540$$
$$n = \frac{540}{0.6} = \frac{5,400}{6} = 900$$

   *Therefore, $900$ people were surveyed.*

   b. **How many people preferred running?**

   *Subtract $540$ from $900$.*

   $900 - 540 = 360$

   *Therefore, $360$ people preferred running.*

2. **Which is greater: $25\%$ of $15$ or $15\%$ of $25$? Explain your reasoning using algebraic representations or visual models.**

   *They are the same.*

$$0.25 \times 15 = \frac{25}{100} \times 15 = 3.75$$
$$0.15 \times 25 = \frac{15}{100} \times 25 = 3.75$$

   *Also, you can see they are the same without actually computing the product because of any order, any grouping of multiplication.*

$$\frac{25}{100} \times 15 = 25 \times \frac{1}{100} \times 15 = 25 \times \frac{15}{100}$$

## Problem Set Sample Solutions

Students should be encouraged to solve these problems using an algebraic approach.

1. **Represent each situation using an equation. Check your answer with a visual model or numeric method.**

   a. **What number is $40\%$ of $90$?**

$$n = 0.40(90)$$
$$n = 36$$

   b. **What number is $45\%$ of $90$?**

$$n = 0.45(90)$$
$$n = 40.5$$

c. 27 is 30% of what number?

$$27 = 0.3n$$
$$\frac{27}{0.3} = 1n$$
$$90 = n$$

d. 18 is 30% of what number?

$$0.30n = 18$$
$$1n = \frac{18}{0.3}$$
$$n = 60$$

e. 25.5 is what percent of 85?

$$25.5 = p(85)$$
$$\frac{25.5}{85} = 1p$$
$$0.3 = p$$

$$0.3 = \frac{30}{100} = 30\%$$

f. 21 is what percent of 60?

$$21 = p(60)$$
$$\frac{21}{60} = 1p$$
$$0.35 = p$$

$$0.35 = \frac{35}{100} = 35\%$$

2. 40% of the students on a field trip love the museum. If there are 20 students on the field trip, how many love the museum?

*Let $s$ represent the number of students who love the museum.*

$$s = 0.40(20)$$
$$s = 8$$

*Therefore, 8 students love the museum.*

3. Maya spent 40% of her savings to pay for a bicycle that cost her \$85.

a. How much money was in her savings to begin with?

*Let $s$ represent the unknown amount of money in Maya's savings.*

$$85 = 0.4s$$
$$212.5 = s$$

*Maya originally had \$212.50 in her savings.*

b. How much money does she have left in her savings after buying the bicycle?

$$\$212.50 - \$85.00 = \$127.50$$

*She has \$127.50 left in her savings after buying the bicycle.*