**Algebra Concepts, Unit 2, Lesson 3**

**Solving Two-Step Linear Equations Using Visual Models**

Many situations in life are modeled by more than one operation. Now that you have learned to solve one-step equations with addition, subtraction, multiplication and division, we are ready to move to the next level. Here are the two part-whole models you will use:

**Multiplication and Addition**

Whole

|--------------------------------------Total-------------------------------------------|

 X

 X

 X

**Multiplication and Subtraction**

|  |  |  |  |
| --- | --- | --- | --- |
| x |  |  |  |

 |------------------------Part----------------------|-------------Part---------------|

**Example 1**

Noah paid $15.00 for 2 tickets to a movie and a drink. He paid $3 for the drink. How much was each ticket to the movie?

|--------------------------------------$15.00----------------------------------------|

 $ 3.00

**Example 2**

Alexis bought 3 packages of napkins. She used 20 at a birthday party for her friend. There were 52 napkins left after the party. How many napkins were in each package?

|----------20------------|---------------------------------52----------------------------|

|  |  |  |
| --- | --- | --- |
|  |  |  |

**Guided Practice**

**Find the value of the question mark or x. Then answer the question in a complete sentence.**

1. Ms. Dubois drove for three hours and had 20 miles left on a 140-mile journey. What was Ms. Dubois’ average speed during the 3-hour drive? Answer the question with a complete sentence.

|-----------------------------------------140--------------------------------------------|

 20

|-------1 hour--------|

1. Jared bought 5 tickets to the movies. He had $50 when he left the house. After buying the movie tickets, Jared had $12.50 left. How much was each movie ticket?

|----------------------------------------$50-----------------------------------------|

 $ 12.50

|--1 ticket--|

1. Jon worked for 6 hours at a restaurant. It cost him $3 in gas to get to work. He had $51 in net earnings after he paid for the gas. How much did Jon earn per hour?

|----------------------------------------51-----------------------------------------|--3--|

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x |  |  |  |  |  |

|---1 hour----|

**Draw your own model.**

1. Dylan bought three pizzas and a 2-liter bottle of soda. The soda cost $2.19 and the total bill was $24.69. What is the cost of 1 pizza?

**Extension**

1. Use the following rule to fill in the table.

 P = 12h

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hours (h) | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 |
| Pay (p) |  |  |  |  |  |  |  |  |  |

2. What is clear to you so far in this unit and what is still confusing?