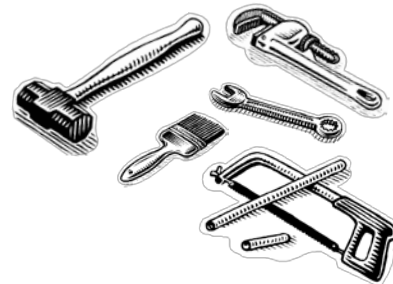


THE WIDGETS - ALGEBRA

NAME: _____

Roxanne needed to purchase a specific number of widgets to complete a job for a customer. She visited two hardware stores. The first one sold widgets for \$3.00 each. Roxanne realized that the number she needed would cost \$9.00 more than she had. She went to the second store which sold the widgets for \$2.50 each. Roxanne purchased the number of widgets she needed and left the store with \$3.00 in her pocket.



QUESTIONS (Explain your answers)

How many widgets did she buy?

How much money did Roxanne have before purchasing the widgets?

ANSWER AND HELP

Question #1: Need to create two equations for each hardware store and the price for widgets.

- $(\$3.00 \times \text{widgets}) - \$9.00 = \$$ You need to subtract \$9.00 because the problem states she has \$9.00 less.
- $(\$2.50 \times \text{widgets}) + \$3.00 = \$$ You need to add \$3.00 because the problem states she has \$3.00 left.

Now you know equation #1 equals equation #2 because both of them equal Roxanne's dollar amount (\$).

$$(\$3.00 \times \text{widgets}) - \$9.00 = (\$2.50 \times \text{widgets}) + \$3.00 \quad \text{Need to solve for widgets.}$$

Move \$9.00 to other side: $\$3 \times \text{widgets} = (\$2.50 \times \text{widgets}) + \$3.00 + \$9.00$

Move \$2.50 widgets to other side: $\$3 \times \text{widgets} - \$2.50 \times \text{widgets} = \$3.00 + \$9.00$

Combine like terms: $\$.50 \times \text{widgets} = \12.00

Divide both sides by \$.50 $\$.50 \times \text{widgets} / \$.50 = \$12.00 / \$.50$

$$\text{widgets} = 24$$

She purchased 24 widgets

Question #2: Substitute the number of widgets into each equation to see how much she had and check our answer.

- $(\$3.00 \times \text{widgets}) - \$9.00 = \$ \rightarrow (\$3.00 \times 24) - \$9.00 = \$ \rightarrow (\$72.00) - \$9.00 = \$ \rightarrow \$63.00 = \$$
- $(\$2.50 \times \text{widgets}) + \$3.00 = \$ \rightarrow (\$2.50 \times 24) + \$3.00 = \$ \rightarrow (\$60.00) + \$3.00 = \$ \rightarrow \$63.00 = \$$

Roxanne started off with \$63.00