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?

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ANSWER AND HELP

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

1. ($3.00 x widgets) - $9.00 = $ You need to subtract $9.00 because the problem states she has $9.00 less.

2. ($2.50 x 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 x widgets) - $9.00 = ($2.50 x widgets) + $3.00   Need to solve for widgets.

Move $9.00 to other side: $3 x widgets = ($2.50 x widgets) + $3.00 + $9.00

Move $2.50 widgets to other side: $3 x widgets - $2.50 x widgets = $3.00 + $9.00

Combine like terms: $.50 x widgets = $12.00

Divide both sides by $.50 $.50 x widgets / $.50 = $12.00 / $.50

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.

1. ($3.00 x widgets) - $9.00 = $ → ($3.00 x 24) - $9.00 = $ → ($72.00) - $9.00 = $ → $63.00 = $

2. ($2.50 x widgets) + $3.00 = $ → ($2.50 x 24) + $3.00 = $ → ($60.00) + $3.00 = $ → $63.00 = $

Roxanne started off with $63.00