

### Warm up:

Solve by using any method.

1)  $y = x - 2$

$3x - 2y = -9$

$-13 - 2 = -15$

$x = -13$   
 $y = -15$

$3x - 2(x - 2) = -9$   
 $3x - 2x + 4 = -9$   
 $x + 4 = -9$   
 $-4 -4$   
 $x = -13$

$2(2x + 3y) = 12$  3  
 $2(3x + 2y) = 13$  2

$6x + 9y = 36$   
 $-(6x + 4y = 26)$

$\frac{5y}{5} = \frac{10}{5}$   $y = 2$

$2x + 3(2) = 12$   
 $2x + 6 = 12$   
 $-6 -6$   
 $2x = 6$   
 $\frac{2x}{2} = \frac{6}{2}$   
 $x = 3$

$x = 3$   
 $y = 2$

Five more than twice a number is thirteen.

$$\begin{array}{r} \rightarrow 2x + 5 = 13 \\ - 5 \quad - 5 \\ \hline 2x = 8 \\ \frac{2x}{2} = \frac{8}{2} \\ \hline x = 4 \end{array}$$

Two less than three times a number is seven.

$$3x - 2 = 7$$

The sum of two numbers is 25 and their difference is 7. Find the numbers.

$$\begin{array}{r} x + y = 25 \\ - (x - y = 7) \\ \hline 2y = 18 \\ \hline y = 9 \end{array}$$

$$\begin{array}{r} y + (x) \\ x + 9 = 25 \\ - 9 - 9 \\ \hline x = 16 \end{array}$$

16 and 9

Corey has \$24 more than twice as much as Stan. Together they have \$150. How much money does each have?

$$C = 2S + 24$$

$$C + S = 150$$

$$2S + 24 + S = 150$$

$$3S + 24 = 150$$

$$\begin{array}{r} 3S + 24 = 150 \\ -24 \quad -24 \\ \hline 3S = 126 \quad S = 42 \end{array}$$

$$\begin{array}{l} \text{Stan} \rightarrow \$42 \\ \text{Corey} \rightarrow \$108 \end{array}$$

$$\begin{array}{l} 2(42) + 24 \\ 84 + 24 \\ 108 \end{array}$$

The bill for five glasses of apple juice and four salads is \$9.50, but the bill for four glasses of apple juice and five salads is \$10.30. How much does each item cost?

salad  $\rightarrow$  \$1.50

juice  $\rightarrow$  \$0.70

$$\begin{aligned} 4(5a + 4s) &= (9.50)4 \\ 5(4a + 5s) &= (10.30)5 \end{aligned}$$

$$\begin{aligned} 20a + 16s &= 38 \\ - (20a + 25s) &= 51.5 \\ \hline -9s &= -13.5 \\ \frac{-9}{-9} &= \frac{-13.5}{-9} \\ s &= 1.5 \end{aligned}$$

$$\begin{aligned} 5a + 4(1.5) &= 9.5 \\ 5a + 6 &= 9.5 \\ -6 &= -6 \\ \hline 5a &= 3.5 \\ \frac{5}{5} &= \frac{3.5}{5} \\ a &= 0.70 \end{aligned}$$

- 1) One number is 4 less than eleven times another. The sum of the two numbers is 92. Find the numbers.
- 2) Marcia has \$84 less than three times as much as Sue. Together they have \$132. How much money does Marcia have?
- 3) Two books and one sweatshirt cost \$36. Five books and 3 sweatshirts cost \$104. how much money does each item cost?
- 4) Six grapefruits cost as much as a dozen oranges. The cost of a dozen grapefruits and two dozen oranges is \$12. How much does one grapefruit cost?

1) One number is 4 less than eleven times another. The sum of the two numbers is 92. Find the numbers.

$$\begin{aligned}x &= 11y - 4 \\x + y &= 92 \\11y - 4 + y &= 92 \\12y - 4 &= 92 \\+4 & \quad +4 \\ \hline 12y &= 96 \quad y = 8\end{aligned}$$

$$\begin{aligned}11(8) - 4 \\88 - 4 \\84\end{aligned}$$

8 and 84



2) Marcia has \$84 less than three times as much as Sue. Together they have \$132. How much money does Marcia have?

3) Two books and one sweatshirt cost \$36. Five books and 3 sweatshirts cost \$104. how much money does each item cost?

4) Six grapefruits cost as much as a dozen oranges. The cost of a dozen grapefruits and two dozen oranges is \$12. How much does one grapefruit cost?

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