

Unit 4 3A Solving Equations in Story Problems

PART 1 Directions: READ CAREFULLY...

Step 1: Read problems 1-5 and write only the equations. (Do NOT solve yet.)

Step 2: Check your equations with a teacher or provided answer key.

Step 3: Once all equations for 1-5 have been confirmed, solve each equation.

Step 4: Check your solutions with a teacher or provided answer key.

- 1.) The highest recorded temperature in Warsaw, Missouri, is 118°F. This is 158° greater than the lowest recorded temperature. Write an equation to find the lowest recorded temperature.

$$x + 158 = 118$$

- 2.) A certain hurricane travels at 25 km per hour. The distance from Cuba to Key West is 145 km. Write and solve an equation to find about how long it would take the hurricane to travel from Cuba to Key West.

$$25x = 145$$

- 3.) Jow buys 9 CDs for the same price, and also a cassette tape for \$9.45. His total bill was \$118.89. Write and solve an equation to find the cost of one CD.

$$9x + 9.45 = 118.89$$

- 4.) Ann has \$300 to spend. She gets a game system for \$85 and games cost \$12 each. How many games can she buy?

$$12x + 85 = 300$$

- 5.) A crate filled with 20 cartons of Gatorade weighs 11.45 Kg. The crate, when empty, weighs 5.6 Kg. How many Kg does each carton of Gatorade weigh?

$$20x + 5.6 = 11.45$$

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- 1.) The highest recorded temperature in Warsaw, Missouri, is 118°F . This is 158° greater than the lowest recorded temperature. Write an equation to find the lowest recorded temperature.

$$\begin{array}{r} x + 158 = 118 \\ - 158 \quad - 158 \\ \hline x = -40^{\circ}\text{F} \end{array}$$

- 2.) A certain hurricane travels at 25 km per hour. The distance from Cuba to Key West is 145 km. Write and solve an equation to find about how long it would take the hurricane to travel from Cuba to Key West.

$$\begin{array}{r} 25x = 145 \\ \frac{25}{25} = \frac{145}{25} \end{array} \quad x = 5.8 \text{ hr.}$$

- 3.) Jow buys 9 CDs for the same price, and also a cassette tape for $\$9.45$. His total bill was $\$118.89$. Write and solve an equation to find the cost of one CD.

$$\begin{array}{r} 9x + 9.45 = 118.89 \\ - 9.45 \quad - 9.45 \\ \hline 9x = 109.44 \\ \frac{9x}{9} = \frac{109.44}{9} \end{array} \quad x = \$12.16$$

- 4.) Ann has $\$300$ to spend. She gets a game system for $\$85$ and games cost $\$12$ each. How many games can she buy?

$$\begin{array}{r} 12x + 85 = 300 \\ - 85 \quad - 85 \\ \hline 12x = 215 \\ \frac{12x}{12} = \frac{215}{12} \end{array} \quad x = 17.91\bar{6} \text{ so... } x \approx 17 \text{ games}$$

- 5.) A crate filled with 20 cartons of Gatorade weighs 11.45 Kg . The crate, when empty, weighs 5.6 Kg . How many Kg does each carton of Gatorade weigh?

$$\begin{array}{r} 20x + 5.6 = 11.45 \\ - 5.6 \quad - 5.6 \\ \hline 20x = 5.85 \\ \frac{20x}{20} = \frac{5.85}{20} \end{array} \quad x = 0.2925 \text{ kg}$$

PART 2 Directions: Complete problems 1-4 and check/correct answers before moving on to the next section.

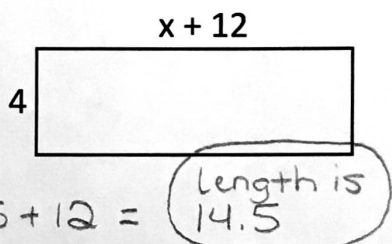
- 1.) Four times the sum of a number and fifteen is 80. Write and solve an equation to find the number.

$$4(n+15) = 80 \quad \left\{ \begin{array}{l} \frac{4(n+15)}{4} = \frac{80}{4} \\ n+15 = 20 \\ -15 \quad -15 \end{array} \right. \quad n = 5$$

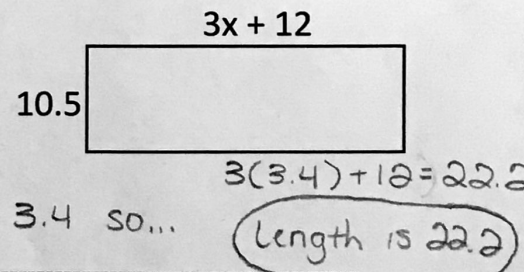
- 2.) Five times the difference of a number and 6 is -50. Write and solve an equation to find the number.

$$5(n-6) = -50 \quad \left\{ \begin{array}{l} \frac{5(n-6)}{5} = \frac{-50}{5} \\ n-6 = -10 \\ +6 \quad +6 \end{array} \right. \quad n = -4$$

- 3.) The area of the rectangle is 58 square units. Write an equation to find the value of x. Then find the length of the rectangle.

$$4(x+12) = 58 \quad \left\{ \begin{array}{l} \frac{4(x+12)}{4} = \frac{58}{4} \\ x+12 = 14.5 \\ -12 \quad -12 \\ x = 2.5 \text{ so... } 2.5 + 12 = 14.5 \end{array} \right.$$


- 4.) The area of the rectangle is 233.1 square units. Write an equation to find the value of x. Then find the length of the rectangle.

$$10.5(3x+12) = 233.1 \quad \left\{ \begin{array}{l} \frac{10.5(3x+12)}{10.5} = \frac{233.1}{10.5} \\ 3x+12 = 22.2 \\ -12 \quad -12 \\ 3x = 10.2 \\ \frac{3x}{3} = \frac{10.2}{3} \\ x = 3.4 \text{ so... } 3(3.4) + 12 = 22.2 \end{array} \right.$$


PART 3 Directions: Complete problems 1-3 and check/correct answers before moving on to the next activity.

- 1.) The total change in Marla's bank account after five days was -\$12. Find the change that occurred on day 3

$$21 + 29 + 17 + (-64) = 3$$

$$x + 3 = -12 \\ -3 \quad -3$$

$$x = -15$$

Day 1	+21
Day 2	-64
Day 3	
Day 4	+29
Day 5	+17
Total	-12

2.) Devon exercised the same amount of time each day for 5 days last week.

- His exercise included walking and swimming
- Each day he exercised, he walked for 15 minutes
- He exercised for a total of 250 minutes last week.

What is the number of minutes Devon swam each of the 5 days last week?

$$\frac{250}{5} = 50 \text{ min. per week}$$

$$\begin{array}{r} x + 15 = 50 \\ -15 \quad -15 \\ \hline \end{array}$$

$$x = 35 \text{ min. swimming}$$

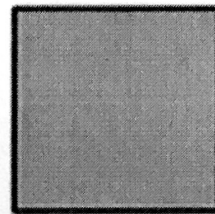
3.) The perimeter of the rectangle is 84 units. Solve for x . Then find the length and the width.

$$2x + 10 + 2x + 10 + 3x + 2 + 3x + 2$$

$$\begin{array}{r} 10x + 24 = 84 \\ -24 \quad -24 \\ \hline \end{array}$$

$$\frac{10x}{10} = \frac{60}{10}$$

$$x = 6 \text{ so...}$$



$$2(x + 5) \quad 2x + 10$$

$$3x + 2$$

$$3(6) + 2 = 20 \text{ is the width}$$

$$2(6 + 5) = 22 \text{ is the length}$$