Solving Two-Steps Equations

LEVEL 1: The Basics

Q1: Find the value of the variable.

- $2x + 5 = 11$
- $\frac{a}{5} - 9 = -1$
- $\frac{x}{5} + 4 = 6$
- $3y - 4 = 14$
- $2x + 4 = 10$
- $6x - 2 = 16$
- $\frac{a}{4} + 1 = 3$
- $5x - 3 = 12$
- $\frac{x}{4} - 3 = 5$
- $\frac{b}{2} - 3 = 7$
- $\frac{x}{3} + 2 = 5$
- $2x + 6 = 12$
- $5c + 6 = 31$
- $4x - 6 = 10$
- $2x + 3 = 11$
- $10 + 4x = 30$
- $\frac{x}{2} - 1 = 3$
- $3y - 5 = 10$
- $8y - 7 = 17$
- $3x + 7 = 16$
- $4a + 7 = 19$

Q2: Kayla's age is 3 less than twice her brother's age. Kayla is 13 years old. How old is her brother?

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LEVEL 2: Dive Deeper

Q1: Find the value of the variable

- $-4x + 7 = 19$
- $-20 + 3a = -5$
- $-\frac{x}{2} + 4 = 0$
- $2y - 8 = -14$
- $-3x + 5 = 11$
- $-2x - 4 = -10$
- $\frac{a}{-3} + 5 = 9$
- $4x - 8 = -4$
- $-x + 7 = 3$
- $\frac{b}{-6} - 2 = -5$
- $\frac{x}{-2} + 1 = 4$
- $0.5x + 1.2 = 3.7$
- $15 - 2c = 21$
- $-5x + 2 = -8$
- $0.2y - 0.8 = 1.2$
- $-x + 8 = 3$
- $\frac{x}{-4} - 6 = -2$
- $1.5a + 0.3 = 4.8$
- $12 - 5y = -8$
- $-6x + 3 = -15$
- $2.5b - 1.0 = 4.0$

Q2: Solve the following:

a) $2(x + 3) = 14$

b) $-3(x - 2) = -9$

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LEVEL 3: Mastering the Concept

Q1: Solve each equation for the variable.

- $(\frac{1}{2})x + 5 = 9$
- $(\frac{2}{3})y - 3 = 7$
- $\frac{a}{4} + \frac{1}{2} = \frac{21}{2}$
- $\frac{b}{0.5} + 2.5 = 12.5$
- $1.5c - 4 = 8$
- $-2.1x + 10 = 1.6$
- $4x + 1 = 2x + 7$
- $3x + 5 = x + 15$
- $6x + 7 = 5x + 13$
- $10x — 6 = 7x + 9$
- $5x — 1 = 2x + 11$
- $6x — 1 = x + 19$
- $6x + 3 = 2x + 10$
- $9x — 2 = 4x + 9$

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Extra worksheet:

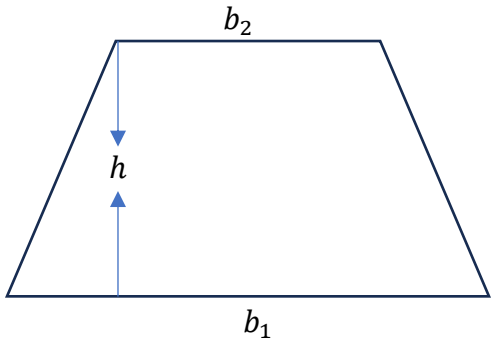
1) The formula for finding the area of a trapezoid is: $A = \left(\frac{b_1+b_2}{2}\right) h$. Find the area for each of the following:

   a. $b_1 = 4$, $b_2 = 9$ and $h = 5$

   b. $b_1 = 4$, $b_2 = 10$ and $h = 6$

   c. $b_1 = 2$, $b_2 = 10$ and $h = 13$

   d. $b_1 = 3.2$, $b_2 = 2.8$ and $h = 3.2$



2) Error Analysis: A student solved $3x + 6 = 15$ as follows:

$$3x = 15 + 6$$
$$3x = 21$$
$$x = 7$$

Identify the mistake(s) the student made and show the correct solution.

3) Real-Life Word Problems:

   a. Triple a number and subtract 2 to get 10. What's the number?

   b. Subtract 6 from half a number and get 5. What is the number?

   c. I subtract 4 from a number, divide by 3, and get 2. What's the number?

   d. Saving for a Bike: You have already saved $45. You decide to save an additional $15 each week. If the bike you want costs $150, write an equation to find how many weeks (w) you need to save, and then solve it.

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