

# Solving One-Step Equations



## LEVEL 1: The Basics

Q1: Find the value of the variable.

$$\diamond x + 7 = 12$$

$$\diamond 8a = 24$$

$$\diamond x + 8 = -3$$

$$\diamond y - 5 = 8$$

$$\diamond \frac{b}{5} = 10$$

$$\diamond x - 7 = -12$$

$$\diamond a + 9 = 21$$

$$\diamond 9c = 81$$

$$\diamond x - 0 = 15$$

$$\diamond 15 + b = 25$$

$$\diamond x + 5 = 12$$

$$\diamond x + 0 = -8$$

$$\diamond c - 10 = 4$$

$$\diamond x - 4 = 9$$

$$\diamond -4 + x = 6$$

$$\diamond 4x = 20$$

$$\diamond x + (-3) = 10$$

$$\diamond x - 2.5 = 1.5$$

$$\diamond \frac{y}{3} = 6$$

$$\diamond x - (-6) = -2$$

$$\diamond 14 + x = 14$$

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Q2: Write the word sentence as an equation. Then solve the equation.

1) 20 equals 8 more than a number  $y$ .

3) The sum of a number  $x$  and 12 equals 15.

2) 4 less than a number  $g$  equals 9.

4) A number  $w$  decreased by 10 is 3.

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## LEVEL 2: Dive Deeper

Q1: Find the value of the variable

$$\diamond x + (-5) = 10$$

$$\diamond a + 8 = 2$$

$$\diamond 7x - 2x = 15$$

$$\diamond y - (-3) = 12$$

$$\diamond -4 + b = -10$$

$$\diamond d - 1.5 = 2.3$$

$$\diamond a + 8 = 2$$

$$\diamond c - 7 = -15$$

$$\diamond m + \frac{1}{4} = -\frac{1}{2}$$

$$\diamond -4 + b = -10$$

$$\diamond 15 = 7 + b$$

$$\diamond 2.5p = -7.5$$

$$\diamond c - 7 = -15$$

$$\diamond v - 6 = 16$$

$$\diamond \frac{q}{-0.8} = 2$$

$$\diamond x + (-5) = 10$$

$$\diamond -5x = -70$$

$$\diamond 5 - y = -1$$

$$\diamond y - (-3) = 12$$

$$\diamond \frac{6m}{7} = 30$$

$$\diamond \frac{64}{x} = -4$$

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Q2: Tell whether (3, 27) is a solution of  $y = 9x$ .

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## LEVEL 3: Mastering the Concept

Q1: Solve each equation for the variable.

$$\diamond -x + 7 = 10$$

$$\diamond -0.5p = 1.75$$

$$\diamond 5 - y = 12$$

$$\diamond \frac{\frac{q}{5}}{-\frac{5}{6}} = -12$$

$$\diamond -3a = -21$$

$$\diamond 10 - x = -3$$

$$\diamond -\frac{b}{2} = -8$$

$$\diamond -4 + y = -15$$

$$\diamond x + \left(-\frac{1}{4}\right) = \frac{3}{8}$$

$$\diamond -\frac{1}{2}a = -\frac{7}{10}$$

$$\diamond y - (-0.6) = 1.4$$

$$\diamond \frac{b}{-0.02} = 50$$

$$\diamond -\frac{2}{3}z = \frac{1}{2}$$

$$\diamond -3.5c = -10.5$$

$$\diamond \frac{w}{-0.1} = -2.5$$

$$\diamond \frac{2}{x} = -5$$

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## Extra worksheet:

1) Find the value of  $x$  when  $a = 7$ :

a.  $a + x = 15$

b.  $x - 2a = 9$

c.  $x + a = 4$

2) Find the Error: Your friend tried to solve the equation  $-x + 5 = 12$ . They subtracted 5 from both sides to get  $-x = 7$ . They said the answer is  $x = 7$ .

Find your friend's mistake, explain it, and provide the correct answer.

3) Real-Life Word Problems:

a. I added 5 to a number and got 12. What's the number?

b. A number minus 7 equals  $-2$ . Find the number.

c. Three times a number equals 18. What's the number?

d. Three friends equally shared the cost of a pizza. If each friend paid \$4.75, what was the total cost of the pizza? (Let  $C$  be the total cost).