

Write your questions here!

**Remember:****Inverse Operations:**

Operation	Inverse Operation
Addition +	Subtraction -
Subtraction -	Addition +
Multiplication *	Division ÷
Division ÷	Multiplication *

Focused on Learning  
 Listen with Headphones  
 Interact with Notes  
 Practice to Learn  
 Problems Checked  
 Evaluate your Answers  
 Don't Test until You're Ready!

To solve equations with two or more steps, apply the inverse operations in the reverse order.

**Examples:**

Solve the following equations for the unknown variable:

Operation Performed on x	Operations to Isolate x
Divide by 2	Multiply by 2
Add 3	Subtract 3

$$\frac{x}{2} + 3 = 19$$

Solve the following equations for the unknown variable:

Operation Performed on x	Operations to Isolate x
Divide by 2.5	Multiply by 2.5
Add 3.2	Subtract 3.2

$$3.2 + \frac{x}{2.5} = 4.6$$

Solve the following equations.

$$\frac{f + 2.5}{3} = 2$$

$$\frac{x - 1}{7} = 1$$

$$16r - 12 = -4$$

Solve the following equations by combining like terms:

$$2x - 14 + 4 = 10$$

$$2j - 4j + 10 = 12$$

Combine like-terms  
if possible!

*Let's try an application problem!*

Write an equation for the function described.

The output of a function is 8 more than 3 times the input. Find the input when the output is -1.

Now, summarize your  
notes here!




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## Practice 3.2

**Solve each equation.**

1)  $2n - 6 = -28$

2)  $6x + 1 = -11$

3)  $3 = -4p + 3$

4)  $\frac{a}{3} - 7 = -10$

5)  $\frac{x+3}{3} = -3$

6)  $-2 = -1 + \frac{k}{14}$

7)  $3 = 1 + \frac{r}{3}$

8)  $-1 = \frac{x}{2} + 2$

9)  $\frac{n+2}{4} = 1$

10)  $-1 - 2v = 11$

$$11) 2 = \frac{3+a}{4}$$

$$12) 3x + 2 = 5$$

$$13) -1 = -x + 2$$

$$14) -6 = k - 2 - 5$$

$$15) 7 = -5p + 4p$$

$$16) -7a - 4a = 11$$

$$17) -6 = 2 + 5x - 6x$$

$$18) 1 = 6p + 6 - p$$

$$19) -14.5 = -0.2 + 2.6x$$

$$20) 1.5x + 4.1 = -2.8$$

## *Application And Extension*

Solve the following equations for the unknown variable:

1.  $-6 = \frac{z}{4} - 3$

2.  $2g - 13 = 3$

3. Suppose the length of a rectangle is  $2x + 1$  and the width is  $3x - 2$ . Find the value of  $x$  if the perimeter is equal to 38 inches. (Hint: draw a picture!)
4. The "Mr. Brust Dance School of Fine Ballet" charges \$24 per class and a one-time registration fee \$150. A student paid a total of \$822 dollars. Find the number classes the student took.

5. Shopping in Germany Mr. Kelly likes to shop at the German grocery store Wasgau. Unlike at the commissary, costumers usually bring their own bags to carry their groceries home. If you forget, however, you can purchase a bag for 0.15€. Suppose Mr. Kelly buys 83 Kinder-Eggs and 4 bags to carry them home. Mr. Kelly pays with *two 20-Euro bills* and receives 2.05€ back in change. Write an equation to find the cost of each KinderEgg. Then, solve your equation!

Quick Review	<p>1. Multiply:</p> $\frac{4}{5} \cdot \frac{5}{2}$	<p>2. Evaluate if <math>x = -3</math> and <math>y = -1</math></p> $3x - y$	<p>3. Simplify:</p> $\frac{5-2}{-3} - 1$
Coming Up	<p>1. Distribute:</p> $-6(-x - 1)$	<p>2. Simplify:</p> $-2x - y - 3x + y$	<p>3. Plot (3, -2)</p> 