

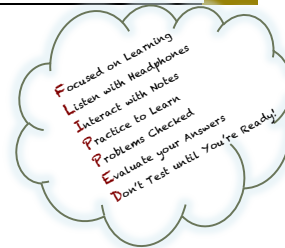
Name \_\_\_\_\_

## [PACKET 3.1: SOLVING ONE-STEP EQUATIONS]

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Write your questions here!

To solve equations, we will be using inverse operations to produce equivalent equations that are simpler. In other words, here is what we will use to solve the equations.



### Addition Property of Equality

It is possible to **add** an equal quantity to both sides of an equation.

### Subtraction Property of Equality

It is possible to **subtract** an equal quantity from both side of an equation.

### Multiplication Property of Equality

It is possible to **multiply** by an equal quantity to both sides of an equation.

### Division Property of Equality

It is possible to **divide** by an equal quantity on both sides of an equation.

## Inverse Operations:

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

Write your questions here!

## Examples:

1.

2.

3.

4.

5.

6.

Let's try an application problem!

An American Flag has an area equal to 9.5 sq. feet while the length is equal to 1.9 ft. Find the width.

Now, summarize  
your notes here!

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## Practice 3.1

**Solve each equation.**

1)  $10x = 150$

2)  $9 = \frac{n}{3}$

3)  $\frac{a}{4} = \frac{15}{4}$

4)  $8 + x = 9$

5)  $15 = \frac{v}{2}$

6)  $0 = 10 + b$

7)  $v - 11 = 7$

8)  $-4 = -2n$

9)  $-m = -33$

10)  $-14a = 154$

$$11) -\frac{3}{2} = 3n$$

$$12) \frac{36}{7} = \frac{9}{14} + n$$

$$13) \frac{3}{4}x = -\frac{1}{3}$$

$$14) \frac{9}{5} + n = \frac{4}{5}$$

$$15) \frac{76}{35} = k + \frac{31}{10}$$

$$16) 25.6 = r + 14.1$$

$$17) 5n = 78.5$$

$$18) 16.4 = n + 18.9$$

$$19) -7.8 = n - 2.6$$

$$20) 9.5v = -98.8$$

## Application And Extension

Solve the following equations for the unknown variable:

1.  $-\frac{2}{3}x = 12$

2.  $b - 2 = -10$

3. A rectangle has an area of  $32 \text{ m}^2$ . Find the length of the rectangle if the width is equal to 12m.

4. The Pentagon is the headquarters of the United States Department of Defense. Its shape is a regular pentagon, and its **perimeter** is about 1.6km. How long is one side of the Pentagon? Write an equation and solve it to find the answer.



5. **Veterinary Medicine** A veterinary assistant holds a dog and steps on a scale. The scale reads 193.7 lb. Alone, the assistant weights 135 lb. Find the weight of the dog by writing and solving a one-step equation.

Quick Review	<p>1. Multiply:</p> $\frac{3}{4} \cdot \frac{4}{3}$	<p>2. Evaluate if <math>x = 3</math> and <math>y = -5</math></p> $3x - y$	<p>3. Simplify:</p> $\frac{3+4}{21} - 4$
Coming Up	<p>1. Distribute:</p> $-5(-2x - 2)$	<p>2. Simplify:</p> $2x - 4y - 3x + y$	<p>3. Plot <math>(-3, 2)</math></p>

# Practice 3.1 Answers... check your work!!

Name \_\_\_\_\_

Algebra 1

## Practice 3.1

Solve each equation.

$$1) \frac{10x}{6} = \frac{150}{10} \quad \boxed{x=15}$$

$$3) \frac{4a}{4} = \frac{15}{4} \cdot 4 \quad \boxed{a=15}$$

$$5) 15 = \frac{v}{2} \cdot 2 \quad \boxed{30=v}$$

$$7) \frac{v-11}{4} = 7 \quad \boxed{v=18}$$

$$9) \frac{-m}{-1} = \frac{-33}{-1} \quad \boxed{m=33}$$

$$12) \frac{36}{7} = \frac{9}{14} + n \quad \boxed{4.5=n}$$

$$14) \frac{9}{5} + n = \frac{4}{5} \quad \boxed{n=-1}$$

$$16) 25.6 = r + 14.1 \quad \boxed{11.5=r}$$

$$18) 16.4 = n + 18.9 \quad \boxed{-2.5=n}$$

$$20) 9.5v = -98.8 \quad \boxed{v=-10.4}$$

$$11) \frac{3}{2} - \frac{3n}{2} = 3 \quad \boxed{n=-1}$$

$$13) \frac{7}{4}x = -\frac{3}{4} \quad \boxed{x=-\frac{3}{7}}$$

$$15) \frac{76}{35} = k + \frac{3}{10} \quad \boxed{k=2.1}$$

$$17) 5n = \frac{78.5}{5} \quad \boxed{n=15.7}$$

$$19) -7.8 = n - 2.6 \quad \boxed{n=-5.2}$$

$$2) 9 = \frac{n}{3} \cdot 3 \quad \boxed{27=n}$$

$$4) 8+x=9 \quad \boxed{x=1}$$

$$6) 0 = \frac{10+b}{-10} \quad \boxed{-10=b}$$

$$8) \frac{-4}{-2} = \frac{-2n}{-2} \quad \boxed{2=n}$$

$$10) \frac{-14a}{-14} = \frac{154}{-14} \quad \boxed{a=-11}$$