

Name: _____ Date: _____

Lesson 2

Solving Equations*Multi Step***Warm Up****Directions:** Simplify each expression.

1) $10c + c$

2) $5m + 2(2m - 7)$

3) $6x - (2x + 5)$

Solving Equations Procedure

1. **Combine** like terms on each side of the equal sign
2. **Add** or **subtract** on both sides
3. **Multiply** or **divide** on both sides
4. **Check**

Solving Two Step Equations*Model Problems*

1) $3x + 7 = -5$

2) $18 = 4x + 10$

Practice Problems

3) $5x - 2 = -32$

4) $-x + 7 = -2$

SWBAT solve multi step equations in one variable

Combining Like Terms and Solving Equations

Model Problems

5) $5x + 18 - 8x = 33$

6) $-3x - 4 + 2x = 2$

Practice Problems

7) $5 - 4x + 3 = -30$

8) $-5 + x + 16 = -3$

9) $7x + 14 - 5x = -8$

Distributing, Combining Like Terms and Solving Equations

Model Problems

10) $-2(3 - d) = 4$

11) $4(x - 2) + 2x = 40$

Practice Problems

12) $3(x-12)=27$	13) $5(4x-4)=-60$	14) $17=3(x-5)+8$
15) $9=6-(x+2)$	16) $3(x-2)+5=14$	17) $18=-2(x-5)+4x$

Regents Questions

<p>18) Solve for x: $15x - 3(3x + 4) = 6$</p> <p>1) 1 2) $-\frac{1}{2}$ 3) 3 4) $\frac{1}{3}$</p>	<p>19) If $-2x + 3 = 7$ and $3x + 1 = 5 + y$, the value of y is</p> <p>1) 1 2) 0 3) -10 4) 10</p>
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Challenge Questions

20) $(x + 6) - (2x + 7) - 3x = -9$	21) $(4x + 2) - (12x + 8) + 2(5x - 3) = 16$
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SWBAT solve multi step equations in one variable

Extra Practice Problems

22) $-5x - 8 + 12 = 34$	23) $-14 = 6x - 4 - 7x$	24) $7x - 3(x - 4) = 8$
25) $4(x - 2) + 2x = 40$	26) $6(x - 1) + 11 = 53$	27) $17 = x - 3(x + 1)$

Summary When solving multi-step equations, first combine like terms on each side if possible. Then use inverse operations.

	Operations	Solve using Inverse Operations
$4x - 3 = 15$	<ul style="list-style-type: none">• x is multiplied by 4.• Then 3 is subtracted.	<ul style="list-style-type: none">• Add 3 to both sides.• Then divide both sides by 4.
$\frac{x}{3} + 2 = 9$	<ul style="list-style-type: none">• x is divided by 3.• Then 2 is added.	<ul style="list-style-type: none">• Add -2 to both sides.• Then multiply both sides by 3.

The order of the inverse operations is the order of operations in reverse.

Exit Ticket

Solve for x and circle your answer.

$$-2(x - 8) = 20$$

- (a) -2
- (b) -10
- (c) -18
- (d) 18

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Solving Equations*Two Step, Combining Like Terms, Distributive Property***Directions:** Solve each equation for the variable. Show all work.

1) $-4x + 7 = 11$

2) $17 = 5y - 3$

3) $-4 = 2p + 10$

4) $-(x - 10) = 7$

5) $-2(y + 5) = -6$

6) $8 = 4(x - 2) + 4$

7) $x - 4 + 2x = 14$

8) $4(y + 1) = -8$

9) $-2(d + 6) = -10$

SWBAT solve multi step equations in one variable

$$10) 5y + 4 - 2y = 9$$

$$11) 14 = 3(x - 2) + 5$$

$$12) 28 = 8x + 12 - 7x$$

$$13) 5(1 - 2x) + 8x = 15$$

$$14) 4y + 7 - y = 19$$

$$15) -3x - 8 + 4x = 17$$