Algebra Review
Order of Operations

<u>Step 1</u>: Evaluate expressions within parenthesis/brackets. Always solve the innermost
 parenthesis/brackets first using PEMDAS.
<u>Step 2</u>: Simplify any numbers with exponents.
<u>Step 3</u>: Solve expressions involving multiplication and division from left to right.
<u>Step 4</u>: Evaluate expressions involving addition and subtraction from left to right.

Use PEMDAS to help you remember the order of operations.
<u>P</u>arenthesis, <u>E</u>xponents, <u>M</u>ultiplication/<u>D</u>ivision, <u>A</u>ddition/<u>S</u>ubtraction

Simplify each expression

1. a) $2 + 6 - 3$ b) $2 + 6 / 3$ c) $2 \times 6 - 3$ d) $2 \times 6 - 3^2$

2. a) $8 - 4 + 5$ b) $8 \times 4 + 5$ c) $8 / 4 \times 5$ d) $(8 - 4) \times 5$

3. a) $9 - 8 / 2 + 3$ b) $9 + 8 - 2 \times 3$ c) $(9 + 8 - 2) \times 3$ d) $9 + 8 / 2 \times 3$

4. a) $4 / 4 + 3 \times 7$ b) $3^2 + 5$ c) $[(1 + (6 - 3)] / 2$ d) $(5^2 + 7) / (12 - 4)$

Combining Like Terms Practice (Beginner)

Step 1: Organize your like terms from greatest coefficient to smallest coefficient alphabetically.

Step 2: Simplify by combining the coefficients of the similar terms.

Simplify each expression

1. $2x + 3x =$

2. $6y + 9y =$

3. $8d + 0 =$

4. $x + 3x =$

5. $9b - 4b =$

6. $10h - 4h =$

7. $5x - 4x =$

8. $2z + 5z + z =$

9. $12y - 5y - 4y =$

10. $15w - 6w + 13w =$

Combining Like Terms Practice (Intermediate)

Directions: Use the answer bank to solve each problem. You can only use the answers from the answer bank once and not all answer options will be used. Good Luck!

	Questions	Solution Area	Answer Bank		
1.	$2x + 4x + 5 =$	_____ + _____	11	-4	y
2.	$10y - 3 - 4y =$	_____ – _____	5x	-10	-7x
3.	$-5x - 3 + 7 - 2x =$	_____ _____	6x	6y	7y
4.	$-2x + 5x - 3 - 7 =$	_____ _____	3x	3	7x
5.	$2x + 4y + 3y - 6x =$	_____ + _____	5	+4	-4x
6.	$4x - (-x) - y + 2y =$	_____ + _____			

Solving Equations - One-Step (Add/Subtract)

Step 1: <u>Combine like terms</u> on either side of the equal sign. (this step is rarely used)

Step 2: Use <u>addition</u> or <u>subtraction</u> to get the variable to only one side of the equal sign.

Step 3: Use <u>addition</u> or <u>subtraction</u> to get the constant to the opposite side of the equal sign as the variable.

Step 4: Use <u>multiplication</u> or <u>division</u> to cancel out the coefficient in front of the variable.

Solve each equation using Step 3.

1. $x - 5 = 7$

2. $-5 + x = -4$

3. $3 + x = 1$

4. $-9 + x = 5$

5. $x + 9 = 5$

6. $x + 4 = -1$

7. $x - 7 = 8$

8. $2 + x = 6$

9. $-10 + x = -3$

10. $-1 + x = -1$

Solving Equations - One-Step (Multiply/Divide)

Solve each equation using Step 4

1. $4x = 12$

2. $2x = 10$

3. $-5x = 15$

4. $-3x = 18$

5. $-x = 7$

6. $.5x = 10$

7. $.2x = 6$

8. $\frac{1}{2}x = 6$

9. $\frac{1}{3}x = 7$

10. $\frac{2}{5}x = 10$

Solving Equations - Multi-Step (Beginner)

Step 1: Combine like terms on either side of the equal sign. (this step is rarely used)

Step 2: Use addition or subtraction to get the variable to only one side of the equal sign.

Step 3: Use addition or subtraction to get the constant to the opposite side of the equal sign as the variable.

Step 4: Use multiplication or division to cancel out the coefficient in front of the variable.

Solve each equation using Steps 2-4.

1. $3x - 2 = 10$ 2. $6x - 2 = 28$ 3. $-5 + 8x = 3$ 4. $-5x - 7 = 8$

5. $3x - 4 = 14$ 6. $5x = 2x + 6$ 7. $5x = x - 16$

8. $6x = 10x + 32$ 9. $3x = -2x + 15$ 10. $6x - 4 = 8x$

Solving Equations - Multi-Step (Intermediate)

Solve each equation using all steps.

1. $2x - 7 = -6x + 9$ 2. $x - 5 = 2x - 1$ 3. $5x - 1 = -4x + 8$ 4. $-2x - 4 = 2x + 8$

5. $5x - 20 = -x + 16$ 6. $5x + 3 = 3x - 8 + 1$ 7. $6x - 4 = 3x + 17$

8. $9x - 8 = 7x - x - 35$ 9. $7x + 5 - 3 = 2x - 13$ 10. $-4x + 2 = 2x - 10$