

Order of Ops. & Evaluating

I can...	<ul style="list-style-type: none"> • Simplify numeric expressions using the proper order of operations. • Evaluating expressions
ORDER OF OPERATIONS	<p>"Operations" mean things like add, subtract, multiply, divide, squaring, etc. If it isn't a number or variable it is probably an operation.</p> <p>To stop the madness, long long ago people agreed to follow rules when doing calculations, and they are:</p> <p>How Do I Remember It All ... ? BEDMAS !</p> <p>B Brackets first</p> <p>E Exponents (also Powers and Square Roots, etc.)</p> <p>DM Division and Multiplication (left-to-right)</p> <p>AS Addition and Subtraction (left-to-right)</p> <p>Divide and Multiply rank equally (and go left to right). Add and Subtract rank equally (and go left to right)</p> <p>Examples: Simplify each expression</p> <p>1. $(7 - \sqrt{9}) \cdot (3 + 1)$ 2. $30 - 5 - 15$</p>
Evaluating expressions	<p>Examples: Evaluate each expression if $a = 4$, $b = -5$, $c = -2$, $d = 3$, & $g = 6$.</p> <p>1. $ab^2 - d$ 2. $c + b + a$</p> <p>3. $(b - dg)$ 4. $a(b + c) + d$</p> <p>5. $-b(a + (c - d))$ 6. $ad - \frac{g^2}{c}$</p>

Solving Equations (review)

	<p>We can solve an equation by using _____ to _____ the variable in the equation.</p> <p>Guidelines:</p> <ul style="list-style-type: none"> • Simplify both sides first (may include distributing) • Use inverse operations to isolate the variable (get the variable alone on one side of the equation.) • Undo addition or subtraction, before undoing multiplication or division. (SADME)
<p>Example 1</p>	<p>Solve $\frac{1}{2}x - 5 = 10$</p> <p>Check: Substitute in the answer you got.</p>
<p>Example 2</p>	<p>Solve $64 - 12w = 5w + 3$</p> <p>Write the original equation. Collect variable on the _____ side by _____.</p> <p>Simplify.</p> <p>Collect constants on the _____ side by _____.</p> <p>_____ each side by _____.</p> <p>Simplify.</p>
<p>Example 3</p>	<p>Solve $\frac{2}{5}(10x + 15) = 18 - 4(x - 3)$</p> <p>Write the original problem.</p> <p>Distribute the _____.</p> <p>Check: Substitute in the answer you got.</p>
<p>Example 4</p>	<p>Solving a Temperature Conversion Formula</p> <p>Solve $K = \frac{5}{9}(F - 32) + 273$ for F.</p>

Solve Linear Systems by Substitution

I can...	Solve systems of linear equations by substitution.
<p>Solving Systems using Substitution</p> <p>Steps:</p> <p>1) Solve one equation for one variable (like x)</p> <p>2) Substitute the found expression into the other equation</p> <p>3) Solve for the other variable (like y)</p> <p>4) Substitute that value into one of the original equations to find the other variable</p> <p>5) Write solution as an ordered pair (like (x,y))</p>	<p>M e t h o d 1 – <i>SUBSTITUTION METHOD</i>:</p> <ol style="list-style-type: none"> 1. Solve 1 equations for one variable 2. SUBSTITUTE that found value into the OTHER equation 3. Solve for the other variable 4. Substitute that value into one of the original equations to find the other variable 3. Write your answer as an ordered pair $\rightarrow (x, y)$ <p>**Think about which equation would be the easiest to solve for - BE LAZY**</p> <p>Use substitution to solve each system of equations.</p> <p>1) $\begin{cases} y = 2x - 1 \\ y = -3x + 4 \end{cases}$ _____ 2) $\begin{cases} -2x + y = -3 \\ 4x + 2y = 12 \end{cases}$ _____</p> <p>3) $\begin{cases} x + y = 3 \\ -2x + y = -6 \end{cases}$ _____</p>

Solve Linear Systems by Elimination

Solving Systems using Elimination

Steps

Method 2 – Elimination METHOD:

$$-3y + 3x = -9$$

$$0 = y - 6x + 2$$

1. Arrange equations so like terms are stacked, like this...

$$-3y + 3x = -9$$

$$-y + 6x = 2$$

2. Create a pair of opposites by multiplying one or both equations

$$\begin{array}{r} -3y + 3x = -9 \\ (-3)(-y + 6x) = (2)(-3) \\ \hline -3y + 3x = -9 \\ 3y - 18x = -6 \end{array}$$

3. Add the columns together

$$\begin{array}{r} -3y + 3x = -9 \\ 3y - 18x = -6 \\ \hline -15x = -15 \\ \hline -15 \quad -15 \\ \hline x = 1 \end{array}$$

4. Solve for the remaining variable

5. Substitute to solve for the other variable.

Write answer as ordered pair \rightarrow (____, ____)

$$\begin{array}{r} -3y + 3(1) = -9 \\ -3y + 3 = -9 \\ -3y = -12 \\ y = 4 \end{array}$$

1. Stack like terms
2. Create a pair of opposites by multiplying one or both equations
3. Add the columns together
4. Solve for the remaining variable
5. Substitute to solve for the other variable

Use elimination to solve each system of equations.

$$1) \begin{cases} 2x + 3y = 11 \\ -2x + 9y = 1 \end{cases}$$

$$2) \begin{cases} 3x + 4y = 0 \\ x - 4y = -8 \end{cases}$$

$$3) \begin{cases} 3x - 5y = 7 \\ 5x - y = 19 \end{cases} \quad \text{—————}$$

$$4) \begin{cases} 2x + 3y = 6 \\ 5x - 5y = 65 \end{cases} \quad \text{—————}$$

Special Cases:

True \Rightarrow All real
Numbers

False \Rightarrow No
Solution

$$5) \begin{cases} x + y = 6 \\ 5x + 5y = 30 \end{cases} \quad \text{—————}$$

$$6) \begin{cases} 3x - y = 5 \\ -6x + 2y = 11 \end{cases} \quad \text{—————}$$

Think and Discuss

What concepts do you need to have extra practice? Be honest.