Bell Work (5 - 7 minutes)

Evaluate:

$(40+24) / 8 - (2^2 - 1)$

Put in order from biggest to smallest
(Hint: Use F <-> D button on calc if needed)

$$\frac{11}{2}, -\sqrt{29}, -5, \frac{21}{5}, 0, \pi, \sqrt{20}$$

Finish Assignment from last time (15 – 20 minutes)

From Today:

Page 15 #1-3, 13-22 (on same number line), 50, 66

Mixed Review:

Page 17 #75, 80, 81, 82

ALGEBRA 3

Notes (25 – 35 minutes)

- Put the following notes in your notebook. If you need paper there is some on the table by the door.

Chapter 1 Section 3
Algebraic Expressions

Objective: Simplify Expressions

Chapter 1 Section 4
Solving Equations

Objective: Solving 2-3 Step Equations

Order of Operations

- PEMDAS (work left to right)
- P = parenthesis (Please)
- E = exponents (Excuse)
- M = multiplication (My)
- D = division (Dear)
- A = addition (Aunt)
- S = subtraction (Sally)

Multiplication and Division at the same time must be worked from left to right

Addition and Subtraction at the same time must be worked from left to right

If there are no variables, use the "Run Matrix" menu option from the calculator to check your work!

1.3 Evaluating Expressions (note: no = sign)

Evaluating the expression = replacing the variables with numbers

In other words… Write Algebraic Expression → Replace Variables → Simplify

Examples (2 -3 minutes to try and evaluate on your own):

1.) Evaluate the following: $3(x+2) - 6x - 8$ when $x = 4$

Note: could we simplify first?

2.) Evaluate the following: $5y + (8 - x) + 2xy$ when $x = -2$

$y = 3$

ANSWERS
(How did your answers compare? Make note if we need to discuss these types of problems next week):

Examples:

1.) Evaluate the following: $3(x+2) - 6x - 8$ when $x = 4$

Note: could we simplify first? $3(4+2) - 6(4) - 8 \rightarrow$

- 14

2.) Evaluate the following: $5y + (8 - x) + 2xy$ when $x = -2$

$y = 3$

$5(3) + (8 - (-2)) + 2(-2)(3) \rightarrow$

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1.4 Solving Equations (note: now has = sign)

Solving the equation = getting the variable by itself

In other words… Identify the variable → Solve: work backwards through PEMDAS → Check your work

Examples (take 3 – 4 minutes per problem):

1.) Solve for m: $3(m+2) - 6m + 8 = 12$

2.) Solve for w: $\frac{2w}{5} - 3 = 7$

3.) Solve for x: $\frac{1}{2}(4x + 10) = 5 - 3x$

4.) Solve the following for P: $2(8t - 6P) - 11R = 7R$

Solving the equation = getting the variable by itself

Examples:

1.) Solve for m: $3(m+2) - 6m + 8 = 12$

$3m + 6 - 6m + 8 = 12$

$-3m + 14 = 12 \rightarrow -3m = -2$

m = 2/3

2.) Solve for w: $\frac{2w}{5} - 3 = 7 \rightarrow \frac{2w}{5} = 10 \rightarrow 2w = 50$

w = 25

3.) Solve for x: $\frac{1}{2}(4x+10) = 5 - 3x \rightarrow 2x + 5 = 5 - 3x$

$5x + 5 = 5 \rightarrow 5x = 0 \rightarrow \boldsymbol{x = 0}$

4.) Solve the following for P:

$2(8t - 6P) - 11R = 7R$

$16t - 12P = 18R \rightarrow -12P = 18R - 16t$

$\mathbf{P = (18R - 16t)/-12}$

Quick Check for Understanding (Answer to the best of your ability in your notes)

- In your own words what is the difference between an expression and an equation?

- In your own words why do you evaluate an expression, but solve an equation?

- When working with evaluating expressions, do you do multiplication before or after division?

Quick Check for Understanding (Answer to the best of your ability in your notes)

- In your own words what is the difference between an expression and an equation?
  - *Expression has no equal sign and you can evaluate but not solve*
  - *Equations have an equal sign and you can solve for variables*

- In your own words why do you evaluate an expression, but solve an equation?
  - *Similar to above…*

- When working with evaluating expressions, do you do multiplication before or after division?
  - *They are the same operation so you work left to right*

For Next Time… (20 – 25 minutes)

From Today:

Page 22 #3, 15, 21, 25, 31, 39

Page 30 #11, 14, 15, 27, 32, 36, 43, 52

Mixed Review:

Page 24 #67, 68, 73

Page 32 #72, 76, 78

If Time Remains after homework:
Put the following examples in your notes.

- Review problems from Algebra 1 – 2 that will be on our first test-.

Algebra 1-2 Review.
Evaluate:

$-4 + 7(5^2 - 2 * 10) - 8 =$

$24 \div 6 * 2 =$

$3 - 10 + 9^2 + \sqrt{36} =$

$\frac{1}{2} - 6\left(\frac{3}{5} + \frac{1}{4}\right) =$

Algebra 1-2 Review.
Solve for the Indicated Variable:

$30 = 6x - 12 \quad solve\ for\ x$

$24 - 3w + 2 = 47 \quad solve\ for\ w$

$8t + 10r = 20m \qquad solve\ for\ t$