Unit 2 EOC Review

Solving Equations

- Look to distribute first * Get Rid of fractions
- Combine like terms on either side of the equal sign
- Follow SADMEP

Example 1: $7(5+2x)+x=110$

$35+14x+x=110$

$35+15x=110$

$-35 \quad -35$

$15x=75$

$\boxed{x=5}$

Example 2: $-4p-5(6p+8)=-14-8p$

$-4p-30p-40=-14-8p$

$-34p-40=-14-8p$

$+14 \quad +14$

$-34p-26=-8p$

$+34p \quad +34p$

$-26=26p$

$\boxed{-1=p}$

Solving Inequalities:

- Follow the steps to solving an equation
- Keep the inequality sign in your final answer
- * If you divide by a negative then SWITCH your sign *

Example 1: $-5(-3-6n)\geq 105$

$15+30n\geq 105$

$-15 \quad -15$

$30n\geq 90$

$\boxed{n\geq 3}$

Example 2: $5-p>-(p+1)$

$5-p>p-1$

$+1 \quad +1$

$6-p>p$

$+p \quad +p$

$6>2p$

$3>p \rightarrow \boxed{p<3}$

Solving Literal Equations:

- Follow the steps to solving an equation
- Only difference is there are more letters than numbers

Example 1: Solve $C=\frac{5}{9}(F-32)$ *for* F

$\frac{9}{5}\cdot C=\frac{\cancel{5}}{\cancel{9}}(F-32)\cdot\frac{9}{5}$

$\frac{9}{5}C=F-32$

$\boxed{\frac{9}{5}C+32=F}$

Example 2: Solve $P=2(l+w)$ *for* l

Distribute

$P=2l+2w$

$-2w \quad -2w$

$\frac{P}{2}-\frac{2w}{2}=\frac{2l}{2}$

$\frac{P}{2}-w=l$

Divide

$\frac{P}{2}=l+w$

$-w \quad -w$

$\boxed{\frac{P}{2}-w=l}$

Arithmetic Sequences:

- Common Difference → constant adding and subtracting to build the function
- Explicit Formula is used when finding specific term
- Recursive Formula is just a rule → reminds us to keep adding – we can use to write an explicit formula

Explicit: $a_n=a_1+d(n-1)$ Recursive: $a_1=$ _____ $a_n=a_{n-1}+d$

Functions:

- To determine if something is a function from the table→ x values cannot repeat
- To determine if something is a function from a graph → must past the vertical line test

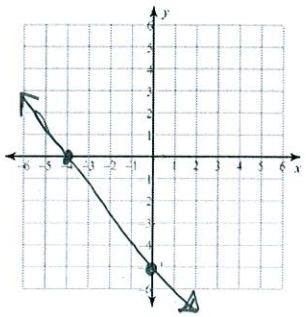
Even and Odd Symmetries:

- Even→ all exponents are even or it has symmetry about the y axis
- Odd → all exponents are odd or it has symmetry about the origin
- Neither → if there are a mix of even and odd exponents or no symmetry

Graphing Linear Equations

- Must be in slope intercept form y = mx + b
- Positive slopes, Negative Slopes, Zero Slope, Undefined Slopes
- Start by plotting your y intercept and use slop to find the other points

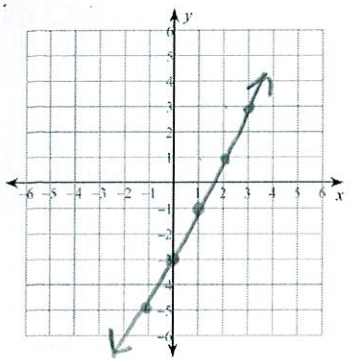
Example 1: $y = -\frac{5}{4}x - 5$



Example 2: $2x - y = 3$

$\frac{-y}{-1} = \frac{-2x}{-1} + \frac{3}{-1}$

$y = 2x - 3$

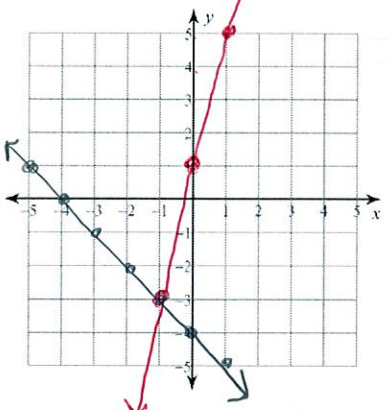


Graphing Systems of Linear Equations

- Graphing 2 lines both must be in slope intercept form y = mx + b
- 3 types of solutions: 1 solution (intersection) (x, y) No Solution (parallel lines) SAME SLOPE Infinitely Many (same line) EVerything is the same

Example 1: $y = -x - 4$
$y = 4x + 1$

(-1, -3)



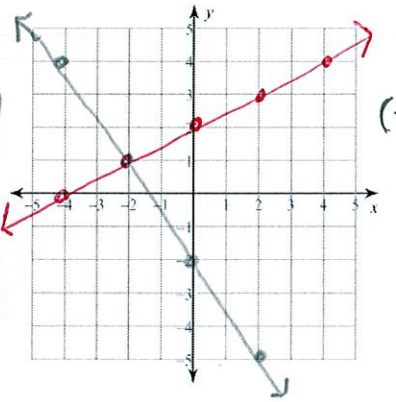
Example 2: $3x + 2y = -4$
$x - 2y = -4$

$\frac{2y}{2} = \frac{-3x}{2} - \frac{4}{2}$

$y = -\frac{3}{2}x - 2$

$\frac{-2y}{-2} = \frac{-x}{-2} - \frac{4}{-2}$

$y = \frac{1}{2}x + 2$



(-2, 1)

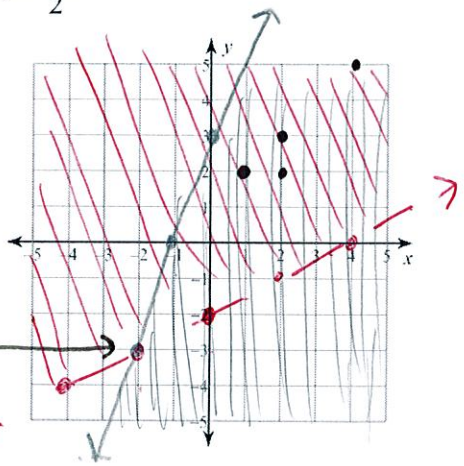
* Solve by: Substitution and Elimination
  - variable by itself
  - opp. signs
  - same #

Graphing Systems of Linear Inequalities

- Graph just like a linear function – need y = mx + b
- Type of Lines: Solid or Dotted
- Type of Shading: Above or Below
- Solution lies in the overlapped shaded Region

	Solid	Dotted
Above	$\geq$	$>$
Below	$\leq$	$<$

Example 1: $y \leq 3x + 3$
$y > \frac{1}{2}x - 2$



pt of intersection is not a solution b/c of dotted

Example 2: $x + y \geq 2$
$4x + y > -1$

$y \geq -x + 2$

$y > -4x - 1$