

Review Day 2 - Word

FILE HOME INSERT DESIGN PAGE LAYOUT REFERENCES MAILINGS REVIEW VIEW

Calibri (Body) 11 A A Aa A

B I U abc x₂ x² A ab A

AaBbCcDc AaBbCcDc AaBbCc AaBbCc AaBb AaBbCcD AaBbCcD

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Honors Advanced Algebra

Review Key Concepts – Day 2

DATE: 8/27

Forms of the Equation of the Line

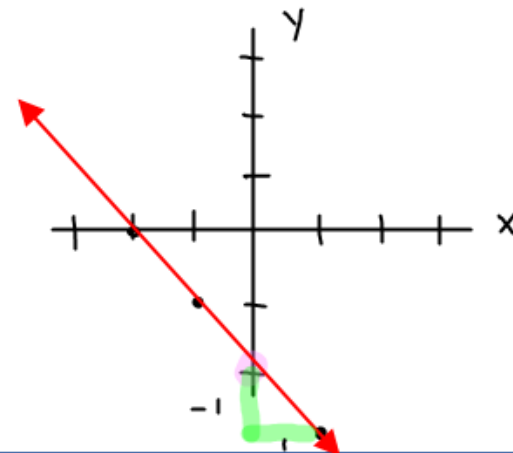
Standard Form $Ax + By = C$; $A, B \neq 0$
 (Usually value of A is positive)
 • Useful when finding x and y intercepts

Slope-intercept Form $y = mx + b \rightarrow$ y-intercept
 \downarrow
 slope = $\frac{\text{RISE}}{\text{RUN}} = \frac{\Delta y}{\Delta x}$
 • Useful because it's easy to graph lines using this form.

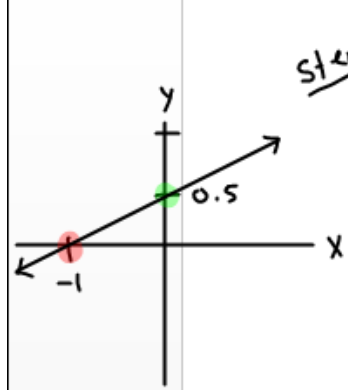
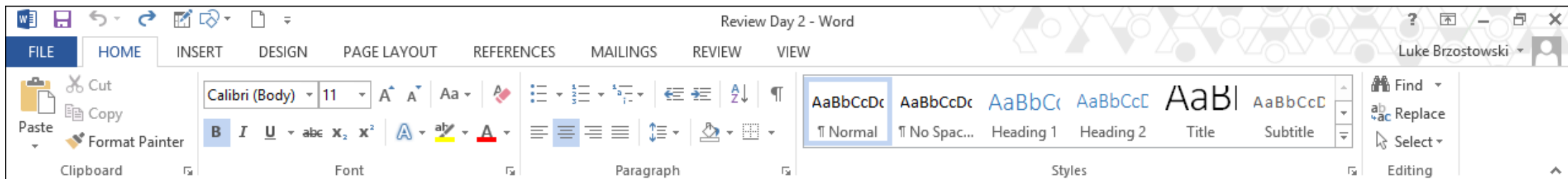
Sketch the graph of each line.

1) $y = -x - 2$
 $y = -1x - 2$

$m = -\frac{1}{1} \downarrow \rightarrow$
 y-int: -2



2) $x - 2y = -1$



step 1
 2) $x - 2y = -1$
 Let $y=0$ to find
x-intercept:
 $x - 2(0) = -1$
 $x = -1$

Method I: Graph with
 x, y - intercept
 step 2
 Let $x=0$ to find
y-intercept:
 $0 - 2y = -1$
 $-2y = -\frac{1}{2}$
 $y = \frac{1}{2} = 0.5$

Method II: Graph using
 slope int - form
 $x - 2y = -1$ solve for y . $(\frac{1}{2} \rightarrow 0.5)$
 $-x - 2y = -1$
 $-2y = -x - 1$
 $-\frac{2y}{-2} = \frac{-x-1}{-2}$
 $y = \frac{1}{2}x + 0.5$
 you can graph 😊

Write the standard form of the equation given:
 $Ax + By = C$

3) slope = 9, y-intercept = 4
 Given slope and y-int use slope int.

$y = mx + b$
 $y = 9x + 4 \Rightarrow -9x + y = 4 \Rightarrow \boxed{9x - y = -4}$
 Should be positive,
 So multiply eq. by -1

4) $y = \frac{3}{2}x + 5$
 Get rid of denominator
 Mult. eq. by 2

$2(y = \frac{3}{2}x + 5) \Rightarrow 2y = 3x + 10 \Rightarrow -3x + 2y = 10 \Rightarrow \boxed{3x - 2y = -10}$
 Distribute
 Subtract $3x$ to each side
 Mult eq by -1

5) $y + 1 = -(x + 3)$

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$$5) y + 1 = -(x + 3) \quad \text{Distribute}$$

$$y + 1 = -x - 3 \quad \text{Add } x \text{ to each side}$$

$$\begin{array}{r} +x \\ \hline \end{array}$$

$$x + y + 1 = -3 \quad \text{Sub. 1 to each side}$$

$$\begin{array}{r} -1 \\ \hline \end{array}$$

$$\boxed{x + y = -4}$$

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$$y = mx + b$$

Write the slope-intercept form of the equation given:

6) through (-2, 4) with slope = $\frac{1}{7}$

x y

$$\boxed{y = \frac{1}{7}x + \frac{30}{7}}$$

DATE: _____

$$y = mx + b$$

$$4 = \frac{1}{7}(-2) + b$$

$$4 = -\frac{2}{7} + b$$

$$7(4 = -\frac{2}{7} + b)$$

$$28 = -2 + 7b$$

$$\begin{array}{r} +2 \\ \hline \end{array}$$

$$\frac{30}{7} = 7b \quad b = \frac{30}{7}$$

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7) through (x_1, y_1) and (x_2, y_2)
 $(0, 4)$ and $(-1, -1)$

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-1 - 4}{-1 - 0} = \frac{-5}{-1} = 5$$

Choose either pt. $(0, 4)$ or $(-1, -1)$ to find y -int. Easier to choose $(0, 4)$ because of 0.

8) through $(-2, 4)$ and parallel to $y = -\frac{3}{2}x + 3$

|| lines \Rightarrow equal slopes

$$y = mx + b$$

$$4 = -\frac{3}{2}(-2) + b$$

$$4 = 3 + b \quad 1 = b$$

9) through $(5, 0)$ and parallel to $y = -x + 5$

$\hookrightarrow m = -1$

$$y = mx + b$$

$$4 = 5(0) + b$$

$$4 = 0 + b$$

$$4 = b$$

$$y = 5x + 4$$

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

\hookrightarrow Note our eq. has same slope as $y = -\frac{3}{2}x + 3$

$$y = mx + b$$

$$0 = -1 \cdot 5 + b$$

$$0 = -5 + b \Rightarrow 5 = b$$

$$y = -x + 5$$