**NOTES**
**UNIT 1B**
**Lesson 4**

Your Notes, Questions, Reminders

**Target Skills: Write the equation of a line in SLOPE INTERCEPT form using the given information.**

Key Fact: To write the equation of a line you **MUST** know (or be able to find) a **POINT** the line PASSES through and the **SLOPE** of the line.

| SLOPE & POINT | TWO POINTS | GRAPH (pts and slope) |
|---|---|---|

**Writing equations of Lines - Given informations falls in to 3 categories**

**You will need to know how to find slope:**

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

**You need to know slope-intercept form:**

$$y = mx + b$$

**Given:** The **Slope** of the line and a **Special Point,** the _____

1. Identify y-intercept (0, b)
2. Substitute **m** value and **b** into $y = mx + b$

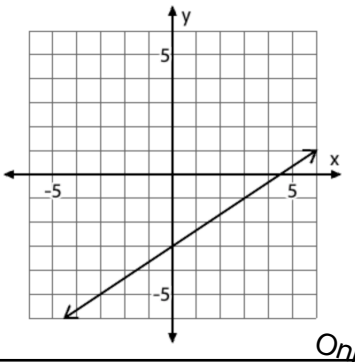
**Example:** Determine the equation of the line with a slope of $-4/5$ and passing through the point $(0,7)$

**Ex:**

**m =**

**Y-intercept:**

**Equation:**




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**Given:** The **Slope** of the line and a **NOT** special point**.**

- $(x_1, y_1)$ **is the POINT the line goes through**
- m = **the slope of the line.**

**POINT-SLOPE Equation of a Line:** $y - y_1 = m(x - x_1)$

I do: Find the equation of the line passing through the point $(1,2)$ and with $m = \frac{3}{4}$

WE do: Write the equation of a line with slope of $-\frac{2}{3}$ and passing through $(-9,5)$.

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U1B L4 Writing Equations of Lines

Write the **point-slope equation here:**

TWO POINTS

YOU do: Write the equation of a line with slope $m = \frac{5}{2}$ passing through $(1, -3)$.

I do: Given points $(1,4)$ and $(5,8)$, find the equation of the line that contains them.

WE do: Given points $(-3,6)$ and $(2, -4)$, write the equation of the line that passes through them.

YOU do: Write the equation of the line that passes through $(4, -2)$ and $(7,4)$.

**SLOPE and Y-INTERCEPT**

Write the equation of a line through $(0, -4)$ with a slope of $m = \frac{-5}{8}$

**HORIZONTAL LINE**

Write the equation of a line through $(-3,5)$ with a slope of zero.

**VERTICAL LINE**

Find the equation of a vertical line through $(5,3)$.

**Given: slope and y-intercept**

**Given: slope and general point**

Find the equation with m = -3/4 and passing through the point (8, 5)

**Given: 2 points**

Find the equation of the line through $(-3,1)$ and $(3,5)$