NOTES: LESSON 4.5 – **SLOPE** AND SIMILAR TRIANGLES

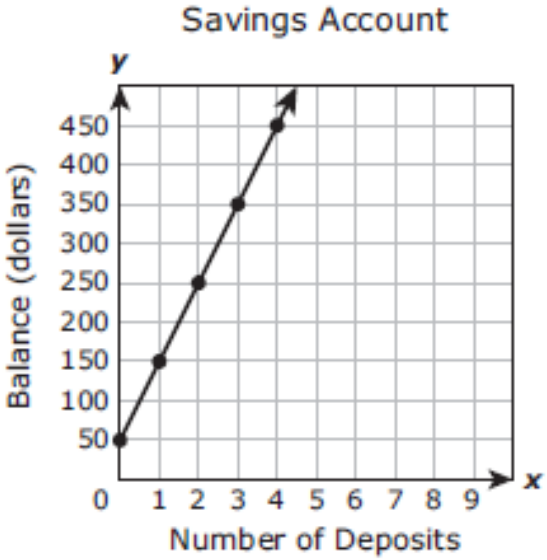
Learning Goal: I can use similar triangles to show that any points on the same line have the same **slope**. **Meta de Aprendizaje**: Puedo usar triángulos semejantes para demostrar que ningún punto de la misma línea tienen la misma **pendiente**.	**Language Goal:** I can read a graph of a line and describe how any two points on the line will have the same **slope**. **Lenguaje Objetivo**: Puedo leer un gráfico de una línea y describir cómo dos puntos cualesquiera de la línea tendrán la misma **pendiente**.

Equations for Slope

$$m = \frac{y_2 - y_1}{x_2 - x_1} \quad \text{or} \quad m = \frac{rise}{run} \quad \text{or} \quad m = \frac{fall}{run}$$

- We can use _____ to calculate **slope**.
- Any triangle _____ will have _____

  AFTER THE FRACTION _____ or _____ .



Little Triangle

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

or

$$m = \frac{rise}{run} = \_\_\_\_ =$$

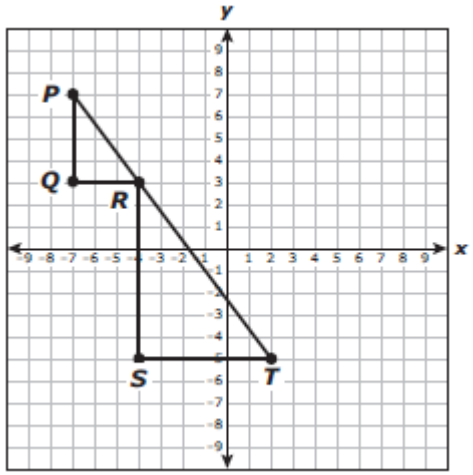
Big Triangle

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

or

$$m = \frac{rise}{run} = \_\_\_\_ =$$

Triangles PQR and RST are similar right triangles.



Little Triangle

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

or

$$m = \frac{fall}{run} = \quad =$$

Big Triangle

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

or

$$m = \frac{fall}{run} = \quad =$$

Which proportion can be used to show that the slope of $\overline{PR}$ is equal to the slope of $\overline{RT}$?

F $\dfrac{3-7}{-4-(-7)} = \dfrac{-5-3}{2-(-4)}$

G $\dfrac{3-(-4)}{7-(-7)} = \dfrac{-5-2}{3-(-4)}$

H $\dfrac{-4-(-7)}{3-7} = \dfrac{2-(-4)}{-5-3}$

J $\dfrac{-4-(-3)}{-7-7} = \dfrac{2-(-5)}{-4-3}$