

Linear Notes (counts for Linear graphing + creating Linear models)

$$y = mx + b$$

slope \nearrow \nwarrow y-intercept

$$(y_2 - y_1) = m(x_2 - x_1)$$

Slope = constant rate of change

$$\bullet \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

Straight line

↗ + slope ↘ - negative ↔ 0 = m ↕ m = undefined

table

x	y

parallel lines - never intersect

• same slope

perpendicular lines - intersect

• opposite reciprocal

5)

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table

x	y

Write equation given 2 points

$$\left(\underset{x_1}{1}, \underset{y_1}{2} \right) \left(\underset{x_2}{3}, \underset{y_2}{4} \right)$$

$$m = \frac{4-2}{3-1} = \frac{2}{2} = 1$$

$$\begin{aligned} y &= mx + b \\ 2 &= (1)(1) + b \\ 2 &= 1 + b \\ 1 &= b \end{aligned}$$

$$y = 1x + 1 \Rightarrow y = x + 1$$

$\underset{m}{1} \quad \underset{b}{1}$

never intersect

lines - intersect 90°

reciprocal

Revise Pretest
Linear Stations
model
Graphing