

MORE LINES

Linear Function FACTS TO KNOW

Slope-Intercept

$$y = \underline{m}x + \underline{b}$$

Point-Slope

$$y - y_1 = m(x - x_1)$$

Standard Form

$$Ax + By = C$$

* no fractions

* A is +

$$4x - 2y = 10$$

$$m = \frac{-A}{B}$$

* Find the eq. of a line given:

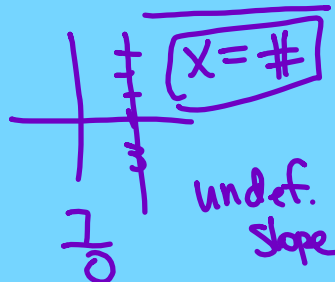
- graph
- 2 points
- parallel or perp. to another line

* Graph lines

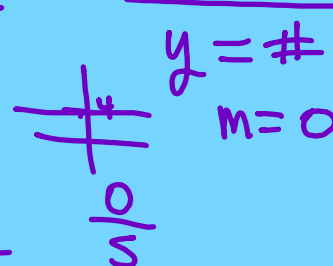
* by hand

* by calculator

Vertical



Horizontal

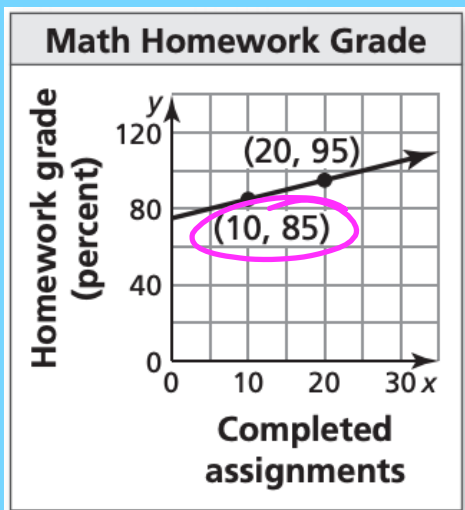


Parallel - Same slopes

Perpendicular - Slopes are opposite reciprocals

Parallel $m = -2/3$ $m_2 = -2/3$

Perp $m = -2/3$ $m_2 = 3/2$



Find the equation of the line shown on the graph.

Point-Slope

$$y - y_1 = m(x - x_1)$$

$$y - 85 = 1(x - 10)$$

$$y - 85 = x - 10$$

$$\boxed{y = x + 75}$$

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

$$m = \frac{95 - 85}{20 - 10} = \frac{10}{10} = 1$$

SHORTCUT!

$$(\underline{20}, -50) \quad (\underline{20}, 30)$$

$$x = 20$$

$$(-37, \underline{53}) \quad (204, \underline{53})$$

$$\boxed{y = 53}$$

Write the eq. of the line which passes through $(-2, 8)$
and is perpendicular to the line $2x - 3y = 7$.

Point-Slope

$$y - y_1 = m(x - x_1)$$

$$(-2, 8) \quad m = -\frac{3}{2}$$

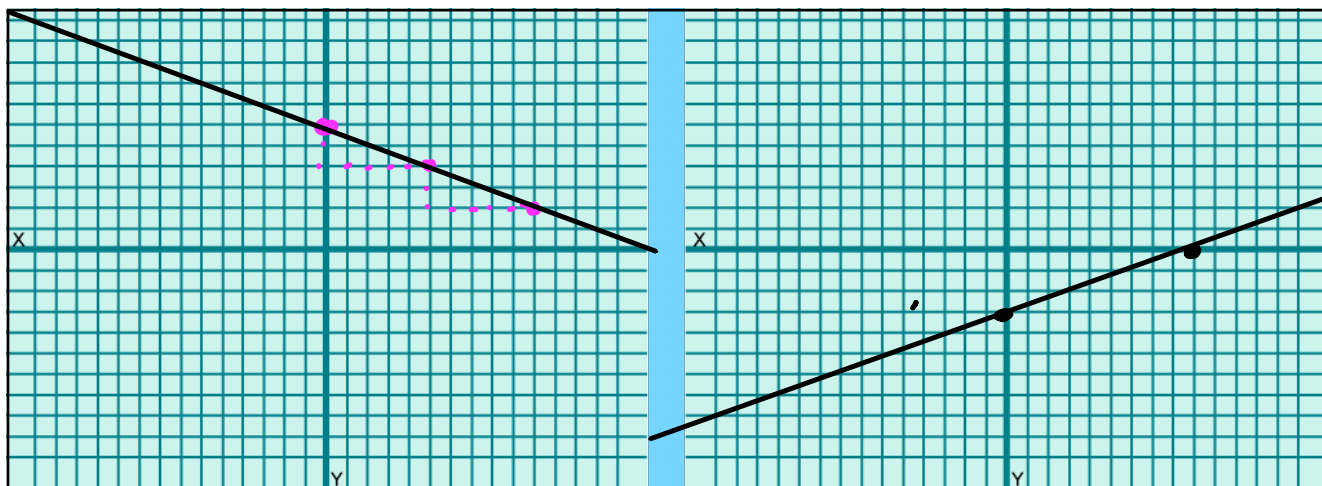
$$m = -\frac{A}{B} = \frac{+2}{+3}$$

$$\perp m = -\frac{3}{2}$$

$$y - 8 = -\frac{3}{2}(x + 2)$$

$$y - 8 = -\frac{3}{2}x - 3$$

$$y = -\frac{3}{2}x + 5$$



Graph $y = -\frac{2}{5}x + 6$
y-int

$$\begin{array}{r|l} x & y \\ 9 & 0 \\ 0 & -3 \end{array}$$

*My way or
the highway!*

x-int: Let $y=0$
 y-int: Let $x=0$

How do you graph on a TI-Nspire?

For standard form:

Press Menu-3-3-1-3

$$\begin{array}{r|l} 5x - 3y & = 30 \\ 6 & 0 \\ 0 & -10 \end{array}$$