

Office hours - Tues Sept 7

- Lines Review
 - Graphing lines
 - Lines
- Problem 6
- ↓

(1) slope m ?

(2) perpendicular
 m_p ?

(3) equation of perpendicular
line through a given pt. (x_0, y_0)

Given the equation of a line
(in slope-intercept form)
 $y = mx + b$

Example : Given (dashed) line $y = -\frac{10}{7}x - 3$

Slope $m = -\frac{10}{7}$

"Perpendicular slope" $m_p = \frac{7}{10}$

"negative reciprocals of each other"

Eqn of perpendicular passing thru $(-5, -4)$?
 (x_0, y_0)
point-slope equation:

$$y - y_0 = m_p (x - x_0)$$

$$y + 4 = \frac{7}{10} (x + 5)$$

Whos Review #4 (similar exercise!)

Given line $y = \frac{6}{5}x - 4$

slope $m = \frac{6}{5}$

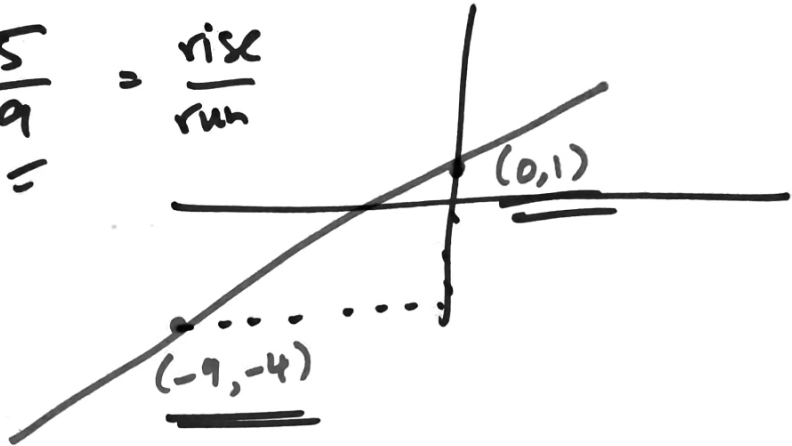
perpendicular slope $m_p = \underline{\underline{-\frac{5}{6}}}$

} negative reciprocal!

Eqn of perpendicular line passing thru
 $(x_0, y_0) = \underline{\underline{(2, 1)}} :$

$$y - 1 = -\frac{5}{6}(x - 2)$$

$$\text{slope } m = \frac{5}{9} = \frac{\text{rise}}{\text{run}}$$



pt-slope :

using (-9, -4) :

$$y + 4 = \frac{5}{9}(x + 9)$$

using (0, 1) :

$$y - 1 = \frac{5}{9}(x - 0)$$

$$y - 1 = \frac{5}{9}x$$

$$y = \frac{5}{9}x + 1$$

↙ slope-int!