

Section 3.2: Slope of a Line

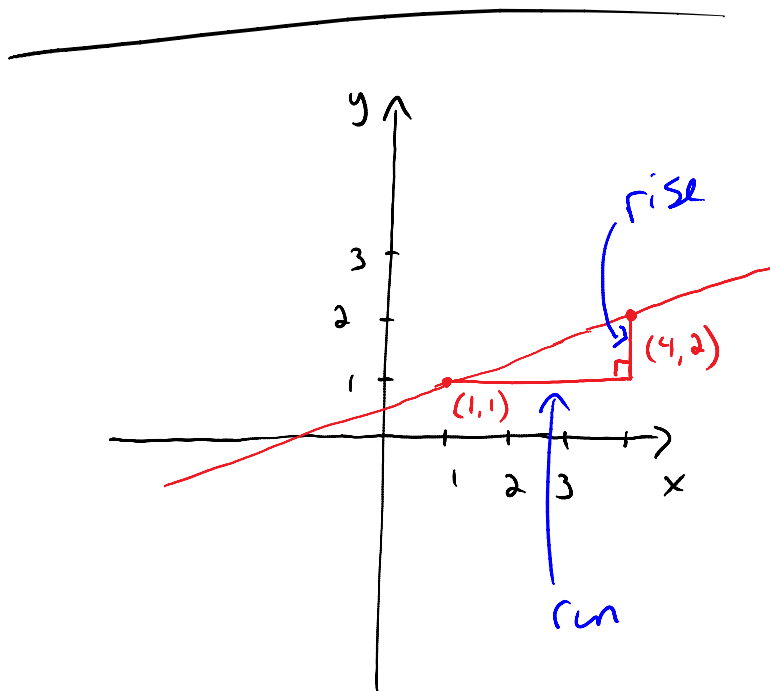
Tuesday, October 15, 2013
9:49 AM

Assignment 3 due on
Tuesday, Oct 29th

Quiz 3 on

Friday, Nov 1

- on chapters 3 & 4



slope - measure of the steepness of the line

$$\text{slope} = \frac{\text{rise}}{\text{run}}$$

for the graph above, $\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{1}{3}$

finding slope from coordinates:

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

example: find the slope of the line between the points $(6, -3)$ and $(-5, -4)$

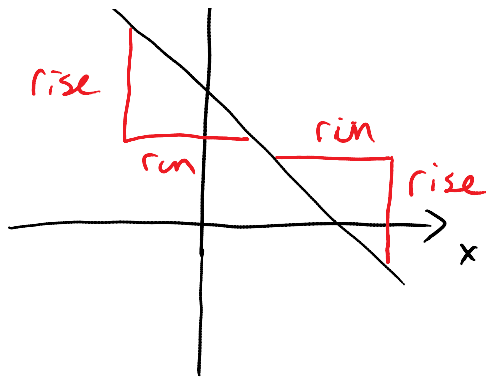
$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-4 - (-3)}{-5 - 6} = \frac{-1}{-11} = \frac{1}{11}$$

or

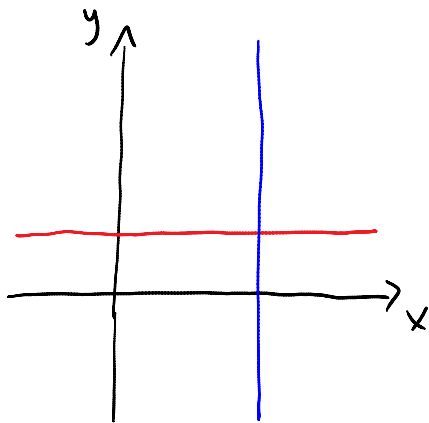
$$= \frac{-3 - (-4)}{6 - (-5)} = \frac{1}{11}$$

negative slope





slopes for horizontal and vertical lines



Slope of horizontal:

$$m = 0$$

(say "zero slope", not "no slope")

slope of vertical:

$m = \text{undefined}$

parallel and perpendicular lines

parallel lines: lines that never meet

lines that have the same slope

$$m_1 = m_2$$

perpendicular lines:

lines that meet at a right angle

$$m_1 = -\frac{1}{m_2}$$

$$(\text{or } m_1 m_2 = -1)$$