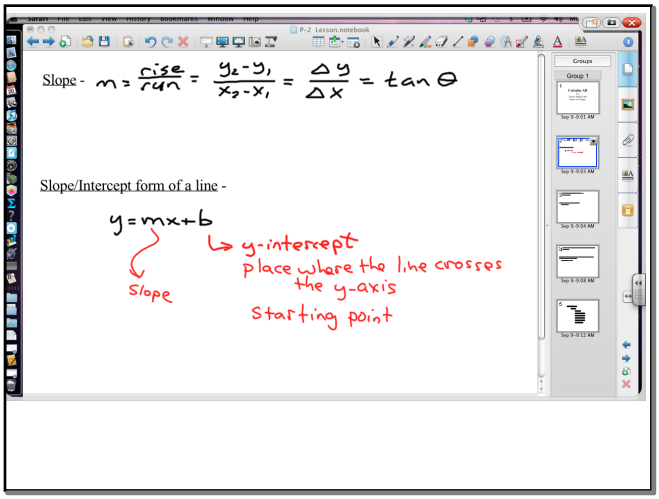
Calculus AB

P-2

Linear Models and Rates of Change



Find the slope of the line passing through them. (pg 16)

9) (3, -4) , (5 , 2)

$m = \frac{-4-2}{3-5} = \frac{-6}{-2} = 3$

Find the slope and the y-intercept of the line.

25) $x + 5y = 20$

$5y = -x + 20$

$y = -\frac{1}{5}x + 4$

$m = -\frac{1}{5}$, $b = 4$

$\frac{-x+20}{5}$

$-\frac{x}{5} + \frac{20}{5}$

Find the equation of the line that passes through the points, ~~and sketch the line.~~

39) (2 , 8) , (5 , 0)

$m = \frac{8-0}{2-5} = -\frac{8}{3}$

$y = -\frac{8}{3}x + b$

$0 = -\frac{8}{3}(5) + b$ $\quad b = \frac{40}{3}$

$y = -\frac{8}{3}x + \frac{40}{3}$

Write an equation of the line through the point (a) parallel to the given line and (b) perpendicular to the given line.

63) (2 , 1) $\quad 4x - 2y = 3$

→ same slope

→ opposite reciprocal

$4x - 3 = 2y$

$2x - \frac{3}{2} = y$ $\quad m = 2$

$\parallel$ $m = 2$ $\qquad \perp$ $m = -\frac{1}{2}$

$y = 2x + b$

$1 = 2(2) + b$

$-3 = b$

$y = 2x - 3$

$y = -\frac{1}{2}x + b$

$1 = -\frac{1}{2}(2) + b$

$2 = b$

$y = -\frac{1}{2}x + 2$

Assignment:

Pg. 16

1 - 6 all

10 - 14 even

24 - 44 even

52 - 58 even

62 - 66 even

79, 80, 82