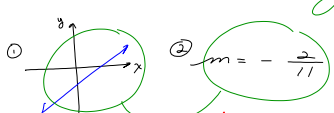


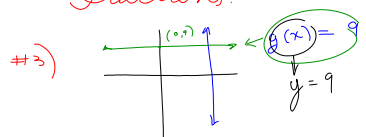
February 16, 2015
 * Exam #1 - Friday



① $m = -\frac{5}{11}$
 Problem!

$$\frac{(-5) + (+7)}{(8) + (+3)} = \frac{-5 + 7}{8 + 3} = \frac{2}{11}$$

② Fractions!



#3)

Feb 16-11:00 AM

3.4
 Forms of Linear Equations

① S.F. $Ax + By = C$

② S.S. $y = mx + b$
 $f(x) = mx + b$

③ Point-Slope
 $y - y_1 = m(x - x_1)$

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$(-3, 7); m = \frac{5}{6}$

Find the equation in S.F.

$$y - \boxed{y_1} = \boxed{m}(x - \boxed{x_1})$$

$$y - 7 = \frac{5}{6}(x - (-3))$$

$$6(y - 7) = 5(x + 3)$$

$$6y - 42 = 5x + 15$$

$$6y - 42 = 5x + 15$$

$$-5x + 6y = 57$$

$$5x - 6y = -57$$

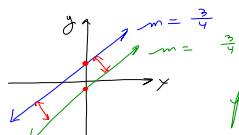
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$$y - 7 = \frac{5}{6}(x + 3)$$

$$6(y - 7) = 5x + 15$$

$$6y - 42 = 5x + 15$$

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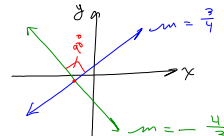
Parallel Lines

① Same slope
 ② Different y-intercepts

$$y = \frac{3}{4}x - 2 \quad | \quad 5x - 6y = 12$$

$$y = \frac{3}{4}x + 9 \quad | \quad 5x - 6y = -54$$

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Perpendicular Lines

* Negative reciprocal of the given slope

Test: $\frac{3}{4} \cdot -\frac{4}{3} = \frac{-12}{12} = -1$ ✓
 means perpendicular

$$y = -\frac{2}{9}x + 4$$

Perp slope: $\frac{9}{2}$

Test: $-\frac{2}{9} \cdot \frac{9}{2} = \frac{-18}{18} = -1$ ✓

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$(-3, -7) \perp (8, -5)$
 $2x - 11y = -71$ $m = \frac{2}{11}$

Find the equations in S.F. form through $(2, 5)$

① parallel
 $m = \frac{2}{11}$
 $y - 5 = \frac{2}{11}(x - 2)$
 $y - 5 = \frac{2}{11}x - \frac{4}{11}$
 $11y - 55 = 2x - 4$
 $-2x + 11y = 51$
 $2x - 11y = -51$

② perpendicular
 $m = -\frac{11}{2}$
 $y - 5 = -\frac{11}{2}(x - 2)$
 $y - 5 = -\frac{11}{2}x + \frac{22}{2}$
 $2y - 10 = -11x + 22$
 $11x + 2y = 32$

$-\frac{a}{b} = \frac{-a}{b} = \frac{a}{-b}$

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Do 3.4 up to #30

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$y = \frac{2}{5}x + 4$ $\{-5 \leq x \leq 0\}$

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