5.4 Standard Form

Dec. 06, 2006

Recall

$3(x+4) = 3x+4$

$3(x)+3(4)$

$3x+12$

Today... The Process

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

↳ $y = mx+b$

↳ $Ax+By=C$

Pt. Slope Form

↳ Slope-Int.

↳ Standard Form

Recall: Standard form:

$$Ax+By=C$$

- where A & B cannot Both Be Zero.
- A & B are coefficients
  A & B are Integer (coefficients No Decimals (no fractions)

Write. $y = \frac{2}{5}x - 3$ in Standard Form (S.F.)

standard form

$5(y) = \left(\frac{2}{5}x - 3\right)5$

$5y = 5\left(\frac{2}{5}x\right) - 5(3)$

$5y = 2x - 15$

$-2x \quad -2x$

$-2x + 5y = -15$

What's the Problem
- Fraction
- Not All Variables on Left.

$A = -2$

$B = 5$

$C = -15$

$3(y) = \left(-\frac{2}{3}x + 4\right)3$ → S. F.

$3y = -2x + 12$

$+2x \quad +2x$

$2x + 3y = 12$

$\frac{3}{1}\left(-\frac{2}{3}x\right)$

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

A = 2
B = 3
C = 12

Write in S.F. the line that Passes through $(-4, 3)$ (x_1, y_1) & Slope of 2

Process: Slope + 1 Pt $\Rightarrow$ P.S.F. $\Rightarrow$ S.I.F. $\Rightarrow$ S.F.

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

$y - 3 = 2(x - -4)$

$y - 3 = 2(x + 4)$

$y - 3 = 2x + 8$

$+3 \quad +3$

$y = 2x + 11$

$-2x \quad -2x$

$-2x + y = 11$

$y - 3 = 2x + 8$

$+3 \quad +3$

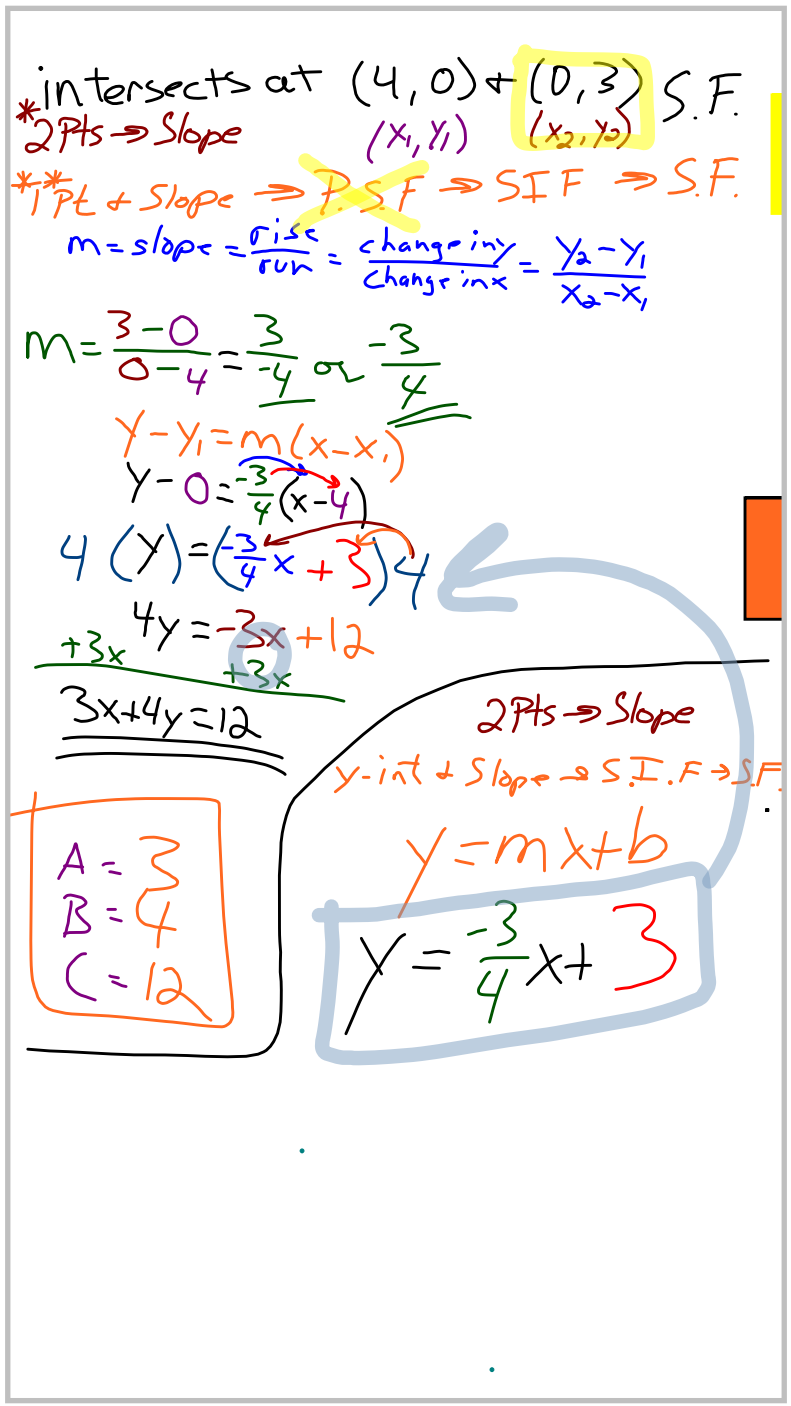
$-2x \quad -2x$

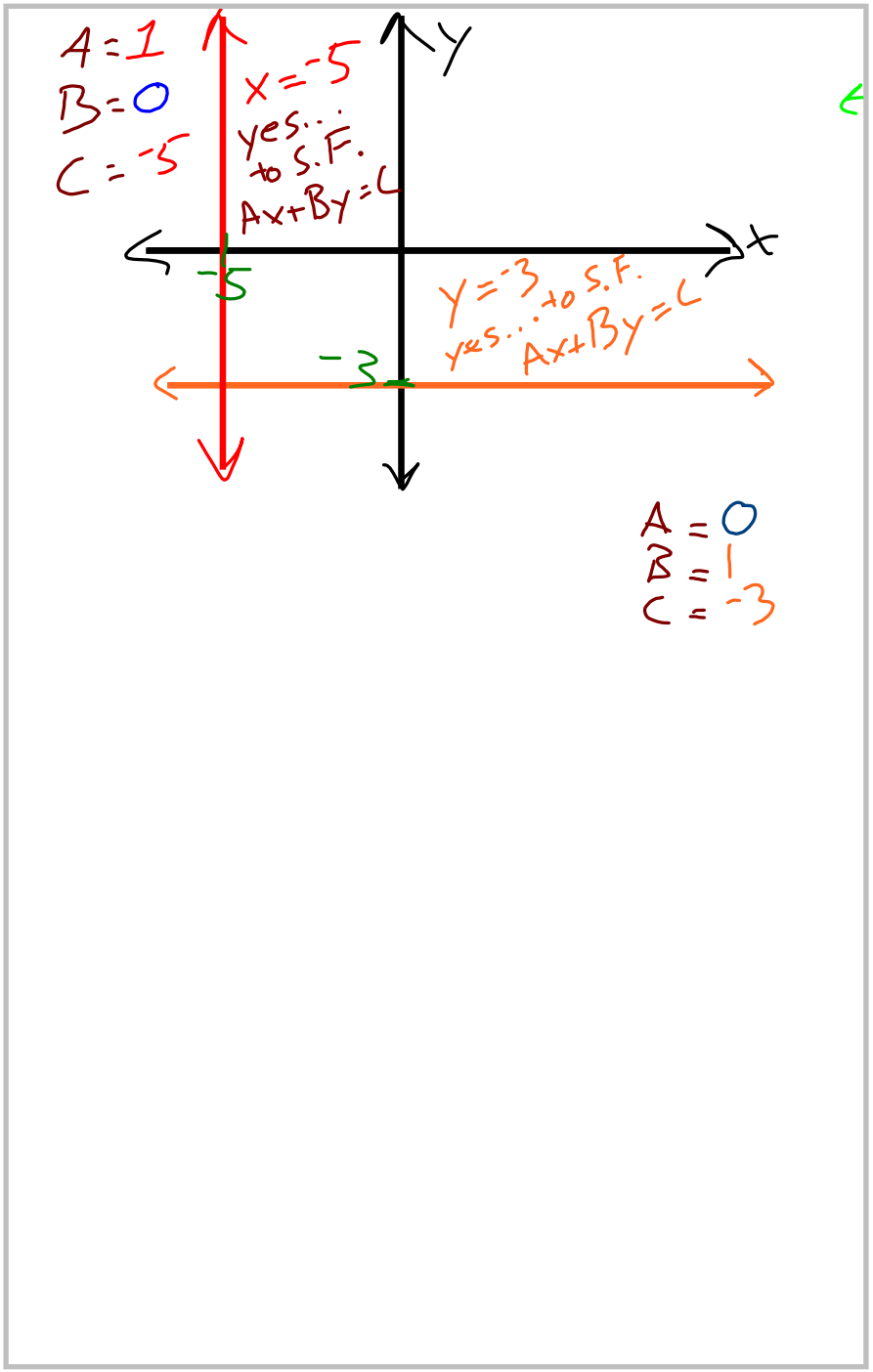
$-2x + y = 11$

$A = -2$

$B = 1$

$C = 11$


intersects at (4, 0) & (0, 3) S.F.
*2 Pts → Slope
(x1, y1)
(x2, y2)
1 Pt & Slope → P.S.F → SIF → S.F.
m = slope = rise/run = change in y/change in x = y2 − y1/x2 − x1
m = 3 − 0/0 − 4 = 3/−4 or −3/4
y − y1 = m(x − x1)
y − 0 = −3/4 (x − 4)
4 (y) = (−3/4 x + 3) 4
4y = −3x + 12
+3x +3x
3x + 4y = 12
A = 3
B = 4
C = 12
2 Pts → Slope
y-int & Slope → S.I.F → S.F.
y = mx + b
y = −3/4 x + 3


A = 1
B = 0
C = -5
x = -5
yes... to S.F.
Ax+By=C
y
x
-5
y = -3 to S.F.
yes... Ax+By=C
-3
A = 0
B = 1
C = -3

O.T.L.

⊙ ... Fix, Redo, & Make Ans. Sheet. for the 5.3 & 5.4 Quiz wk.st.

① Write Summary Box on pg 293 into Notes

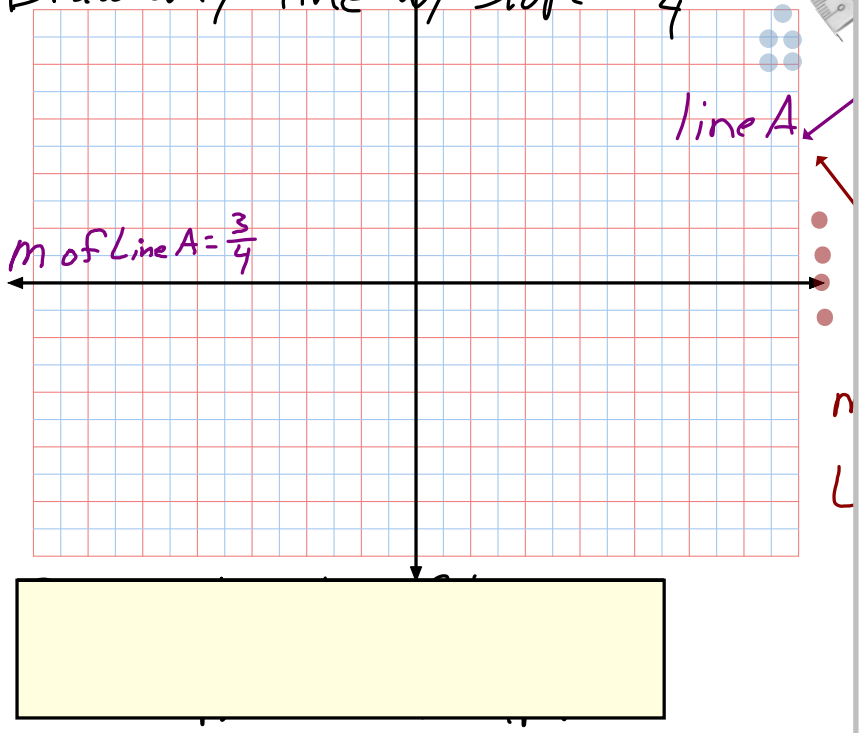
② pg 294-295:
1, 2, 15, 19, 20, 21, 25, 28, 29, 39-51(a)

③ Chapter Test Friday

7:00 am
Review Session

Perpendicular lines: 2 lines in the Same Plane that intersect at a Right or 90° angle.

Draw any line w/ Slope = $\frac{3}{4}$



$\perp$ => Perpendicular

Line A $\perp$ Line B