

Like 3.4 #32

$$f(x) = \frac{2}{7}x$$

$$m = \frac{2}{7}, (0, b) = (0, 0)$$

$$y = mx + b$$

Slope-Intercept Form of a
linear equation.

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

Point-Slope Form

Building an
Equation

$$Ax + By = C$$

Standard Form

If m & $(0, b)$ given, then $y = mx + b$ is
great.

Find an equation of the line with the given
slope and the given y-int.

$$m = \frac{2}{3}, (0, b) = (0, 2)$$

$$y = \frac{2}{3}x + 2$$

$$m = -7, (0, b) = (0, -11)$$

$$y = -7x - 11$$

$$y - y_1 = m(x - x_1) \quad \text{Point-Slope Form}$$

Find an Equation of the line with given slope, thru the given point.

$$m = \frac{2}{3}, \quad (3, -5) = (x_1, y_1)$$

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

$$y - (-5) = \frac{2}{3}(x - 3) \quad \text{DONE!}$$

If question asks for slope-intercept form..

$$y + 5 = \frac{2}{3}x - 2$$

$$y = \frac{2}{3}x - 7$$

... in function notation ...

$$f(x) = \frac{2}{3}x - 7$$

... in standard form ...

$$-\frac{2}{3}x + y = -7 \quad Ax + By = C$$

... in standard form with integer coefficients ...

$$-2x + 3y = -21$$

with taste & elegance ...

$$2x - 3y = 21$$

Find an eq'n of the line thru...

$$\begin{array}{l} (2, 3), (-2, 6) \\ (x_1, y_1) \quad (x_2, y_2) \end{array}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{6 - 3}{-2 - 2} = \frac{3}{-4} = -\frac{3}{4}$$

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

$$y - 3 = -\frac{3}{4}(x - 2)$$

$$y - 6 = -\frac{3}{4}(x + 2)$$

$$(2, -3), (17, -3)$$

$$y = -3$$

$$(2, -11), (2, 5478999\pi)$$

$$x = 2$$

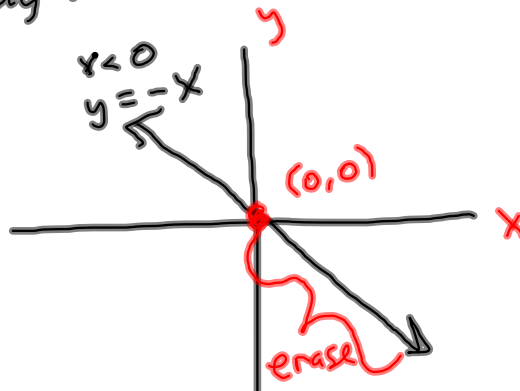
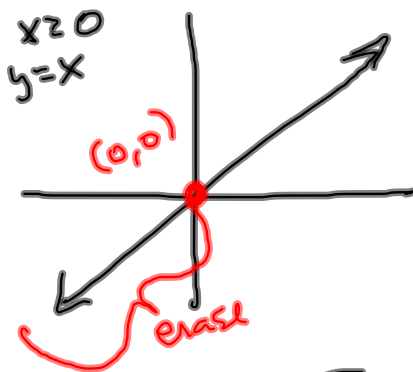
§ 3.5 I, II Monday

§ 3.4 All by Friday

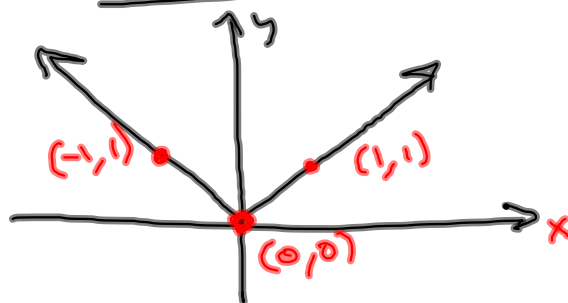
§ 3.6 Piecewise-defined functions.

$$f(x) = |x| = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$$

Boundary: $x = 0$

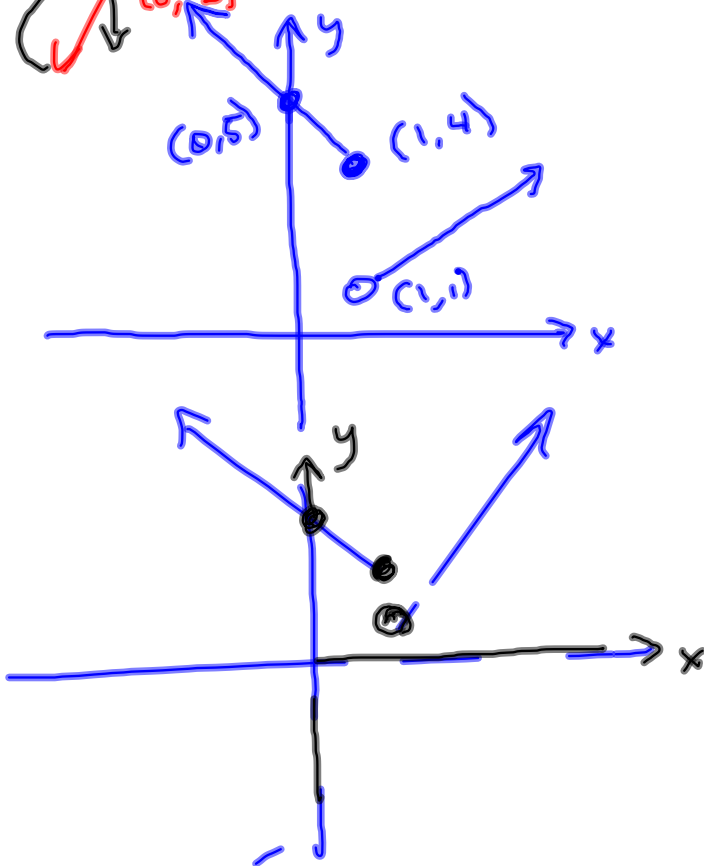
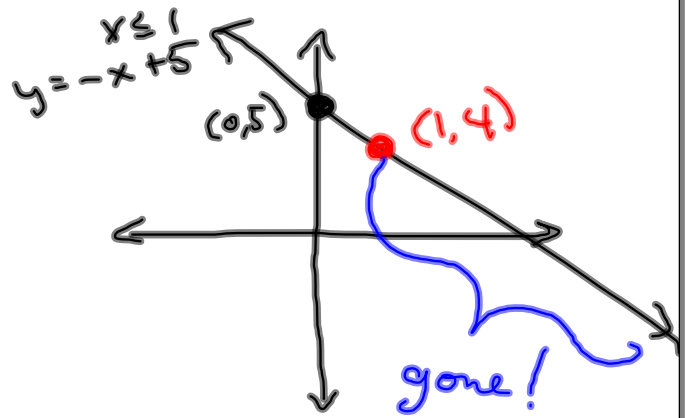
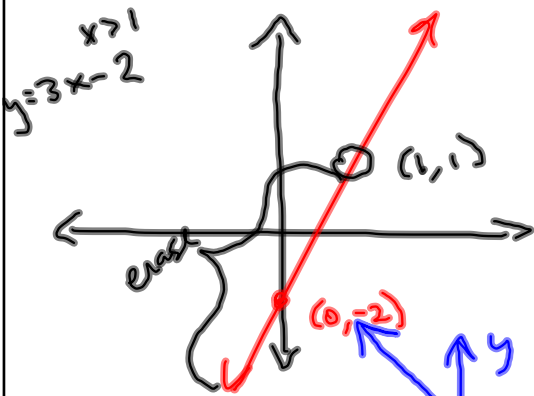


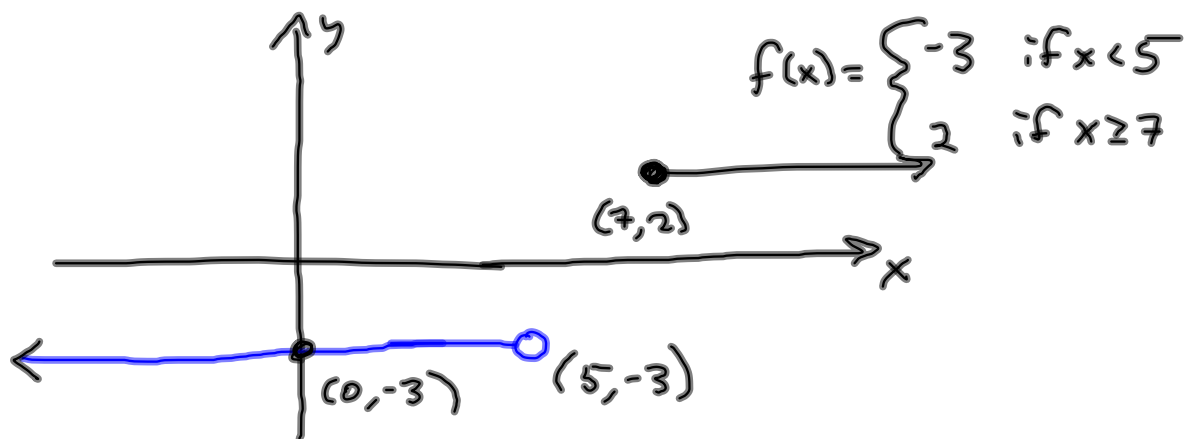
Final Graph



$$f(x) = \begin{cases} 3x-2 & ;f \ x > 1 \text{ open dot} & 3(1)-2 = 1 \rightsquigarrow (1,1) \\ -x+5 & ;f \ x \leq 1 \text{ closed dot} & -1+5 = 4 \rightsquigarrow (1,4) \end{cases}$$

Bdry: $x=1$





§ 3.6 I #5 9, 12, 14, 16, 18, 20 Monday

§ 3.6 II #5 22, 24, 26, 28, 30, 32