

9/2/09 Lines and Linear Eqns.

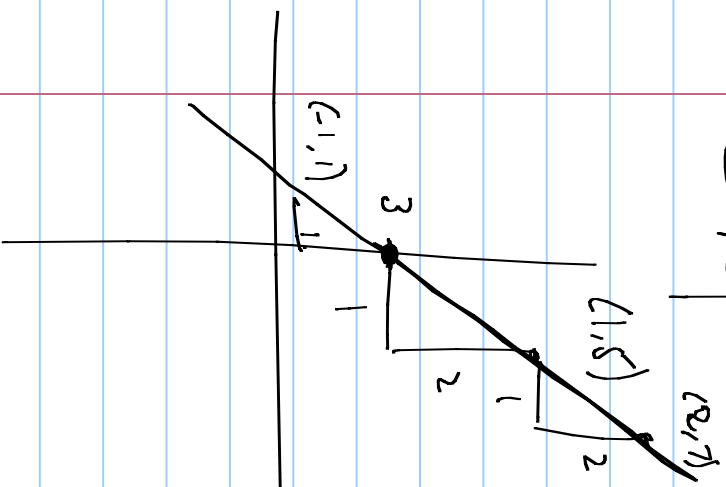
Slope intercept form

x input
y output

$$y = mx + b$$

slope
y-intercept

$$y = 2x + 3$$



Point-Slope Form

Slope - 1

Point (2, 3)

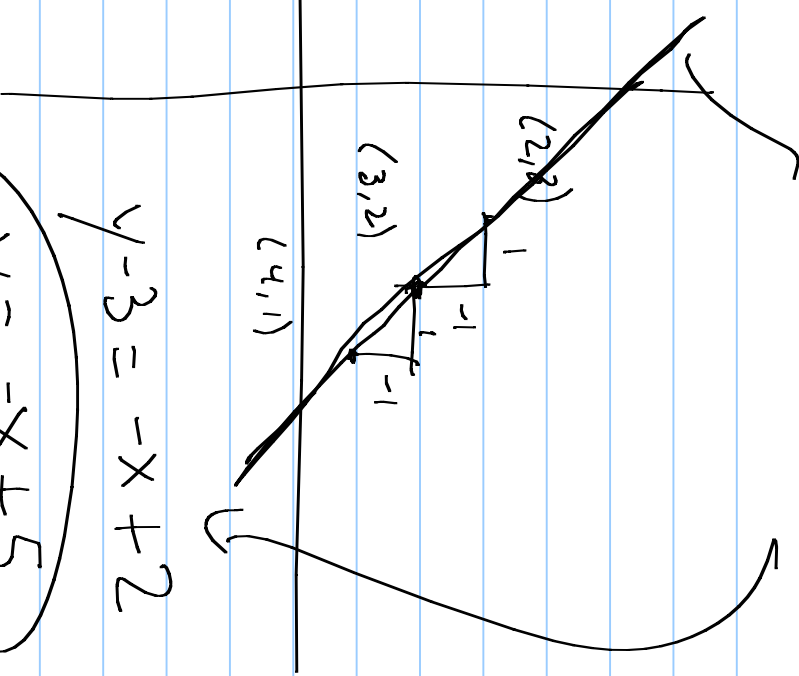
$$(y - y_0) = m(x - x_0)$$

Slope m

Point (x_0, y_0)

P-S. Form

$$(y - 3) = -1(x - 2)$$



Slope
Intercept form

$$y = -x + 5$$

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

General Form $ax + by = c$

} Can write any line

$$x = 2$$



$$\text{slope} = \frac{1}{0} = ?$$

p. 62 Example 3

180 lb. ♂
(3, .07)
(4, .09)

# drinks	3	4	5	6	7	...
B.A.C.	0.07	0.09	0.11	0.13	0.15	

$$\text{Slope} = \frac{.09 - .07}{4 - 3} = .02$$

B.A.C. = .02 Drinks + .81

$$(B.A.C. - .07) = .02(\text{Drinks} - 3)$$

$$B.A.C. - .07 = .02\text{Drinks} - .06$$

Fear 90 lb. ♀ vs. 180 lb. ♂

Slope greater

rate of change of BAC per drink is
larger with a smaller mass

$$(y = .05x)$$

A+ around of respiratory arrest
becomes an issue.

How many drinks for a 150 lb of
to reach B.A.C. of 0.2?

$$.02x + .01 = 0.2$$

$$\begin{array}{r} .02x = .19 \\ \underline{.02} \end{array}$$

$$x = 9.5$$

$$5F - 9C = 160$$

$$C = 20$$

$$5F - 9 \cdot 20 = 160$$

$$5F - 180 = 160$$

$$+180 \quad +180$$

$$\frac{5F}{5} = \frac{340}{5}$$

$$F = 68$$

Graph

$$-x + 3y = 9$$

$$\frac{-x + 3y = 9}{+x}$$

$$3y = x + 9$$

$$y = \frac{1}{3}x + 3$$

$$10x + 3 = -4x + 8$$
$$-3 \quad -3$$

$$\frac{10x}{+4x} = \frac{-4x + 5}{+4x}$$

$$\frac{14x}{14x} = 5$$

$$x = 5/14$$

$$-4x + 1 = \boxed{}x + 7$$

$$x = -4$$

Label the missing coefficient

$$-4x + 1 = bx + 7$$

Substitute for x

$$-4(-4) + 1 = b(-4) + 7$$

Solve for the missing value

$$+16 + 1 = -4b + 7$$

$$\begin{aligned} 17 &= -4b + 7 \\ -7 & \quad -7 \\ \hline 10 &= -4b \\ -\frac{10}{4} &= b \\ -\frac{5}{2} & \\ -2.5 & \end{aligned}$$

$$11.75x + 32.95 = 68.2$$

$$11.75x = 68.2 - 32.95$$

$$11.75x = 35.25$$

$$x = \frac{35.25}{11.75} = 3$$

$$\text{Year} = 1995 + 3 = \textcircled{1998}$$