Lecture 9/13/2023
Exam Next Tuesday

Hw Due
Hw 11 Tody
Hw 12 Friday
Hw 13 Sund
Hw 14 Monday

Forms of a line

Recall : Pla Slope - intercept form

$$y = mx + b$$

$b = y$-cord of y-int
$m = $ slope.

Ex: The following is a linear equation. Put it
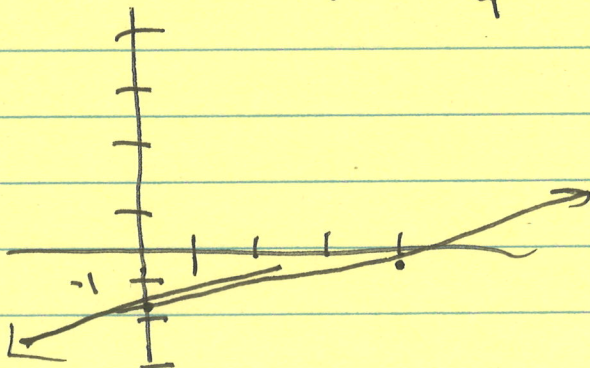in Slope - intercept term, then graph it.
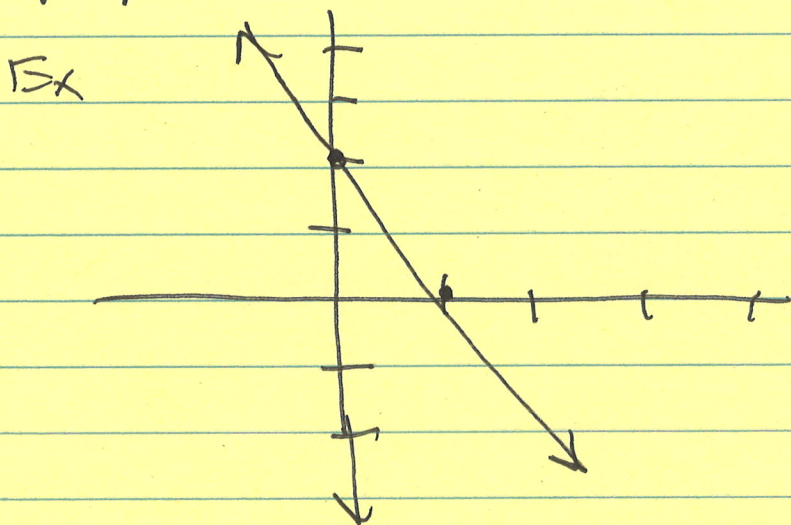
$$x + 4y = 2x - 7$$

① get y all by iself

$$4y = x - 7$$
$$y = \frac{1}{4}x - \frac{7}{4}$$

Slope $= \frac{1}{4}$
y-int $\left(0, -\frac{7}{4}\right)$

Can get the equation of a line through a graph

5x

Slope = -2

y int = (0, 2)

$$y = -2x + 2$$

Slope Point-Slope-form

Another way to get the equation of a line through a graph is point-slope form.

Point slope form

Defn: ~~Point slope~~ A line that goes through the point (x_0, y_0) with slope m is given by

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

Ex: ~~m = $\frac{8}{3}$~~ $m = -2$ point $(2, -5)$

$$y = -2(x - 2) - 5 = \boxed{-2x - 1}$$

Ex: line that goes throug (-6,2) (-4,10)

① Find slope

$$\frac{8}{2} = 4$$

② Point-slope form

$$y = 4(x+6)+2 = 4x+24+2$$

$$\boxed{y = 4x+26}$$