

10/3 Algebra - Downing

Ex) Graph using intercepts: $3x + 4y = 12$

x-intercept
Replace y with 0
 $y = 0$

$$3x + 4y = 12$$

$$3x + 4(0) = 12$$

$$\frac{3x}{3} = \frac{12}{3}$$

$$x = 4$$

$(4, 0)$

y-intercept
Replace x with 0
 $x = 0$

$$3x + 4y = 12$$

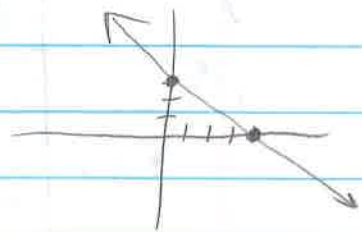
$$3(0) + 4y = 12$$

$$\frac{4y}{4} = \frac{12}{4}$$

$$y = 3$$

$(0, 3)$

Graph



Ex) Graph using intercepts: $2x - y = 4$

x-int. $y = 0$

$$2x - 0 = 4$$

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

$$x = 2$$

$(2, 0)$

y-int $x = 0$

$$2(0) - y = 4$$

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

$$y = -4$$

$(0, -4)$



Ex) Awards banquet. Rent tables for 180 people. Small tables seat 6 people, large tables seat 10 people. $6x + 10y = 180$ $x = \#$ of small tables
 $y = \#$ of large tables

x-int

y-int

$$6x + 10y = 180$$

$$6x + 10y = 180$$

$$\frac{6x}{6} = \frac{180}{6}$$

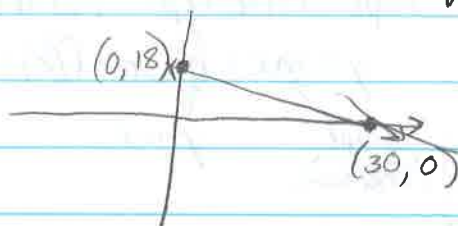
$$\frac{10y}{10} = \frac{180}{10}$$

$$x = 30$$

$$y = 18$$

$(30, 0)$

$(0, 18)$

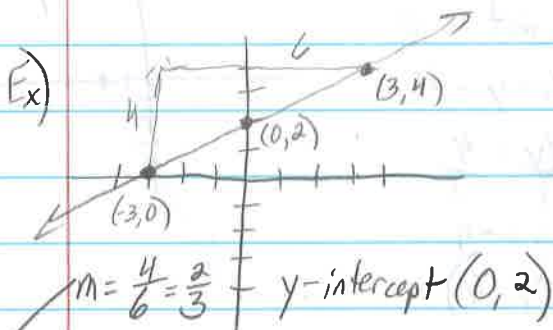
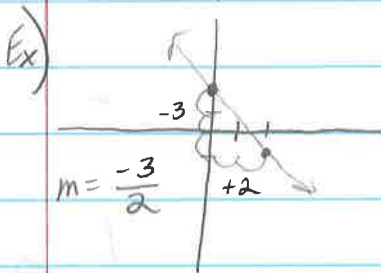
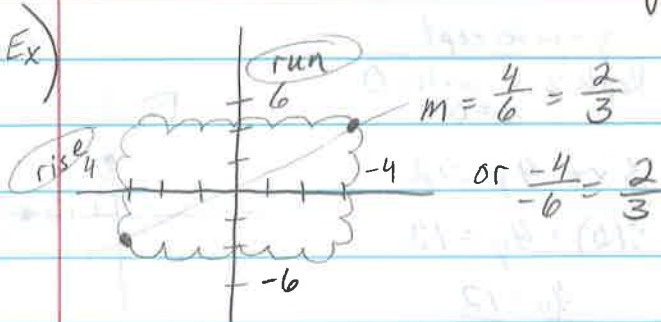


↑
The number of small tables needed if I have no large tables

↑
The number of large tables needed if I have no small tables.

Slope of a line

slope: $\frac{\text{rise}}{\text{run}} = \frac{\uparrow}{\leftarrow} = \frac{\text{change in } y \text{ values}}{\text{change in } x \text{ values}}$
(m) - constant rate of change.



Standard Form of a Linear Equation
 $Ax + By = C$

Slope Intercept Form

$$y = mx + b \text{ or } f(x) = mx + b$$

slope (fraction) y-int

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

Notes on Graph Paper

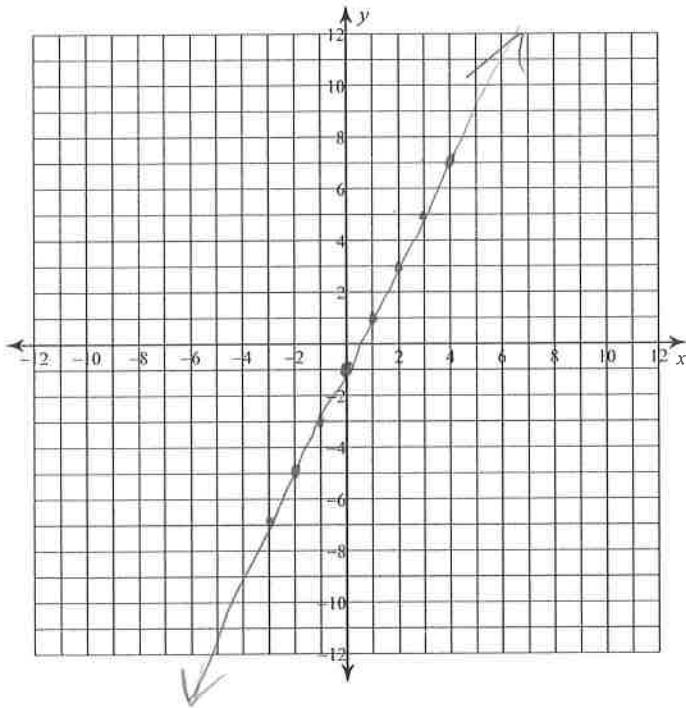
* PC on Friday

HW - PC Review

* Key is on website

Graph Paper

1)

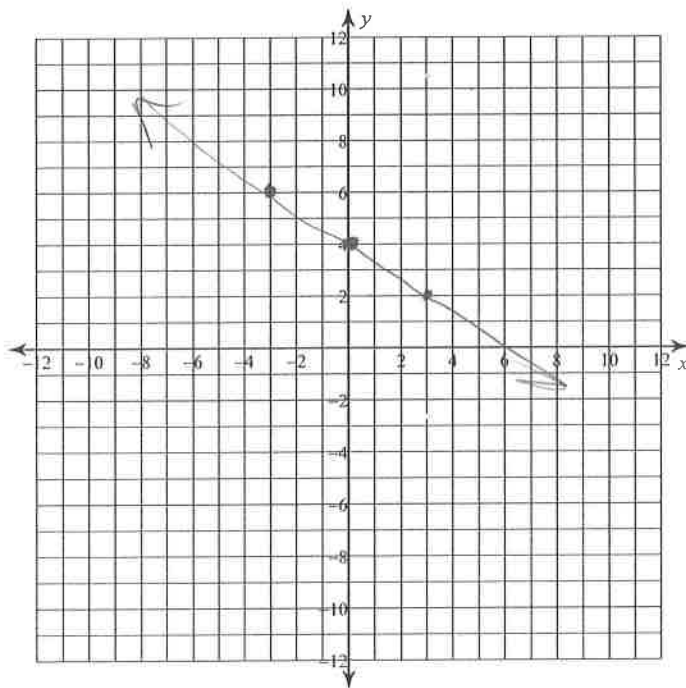


Graph $f(x) = 2x - 1$

slope $\frac{2}{1}$ →
 more from point

y-int $(0, -1)$
 start here

2)

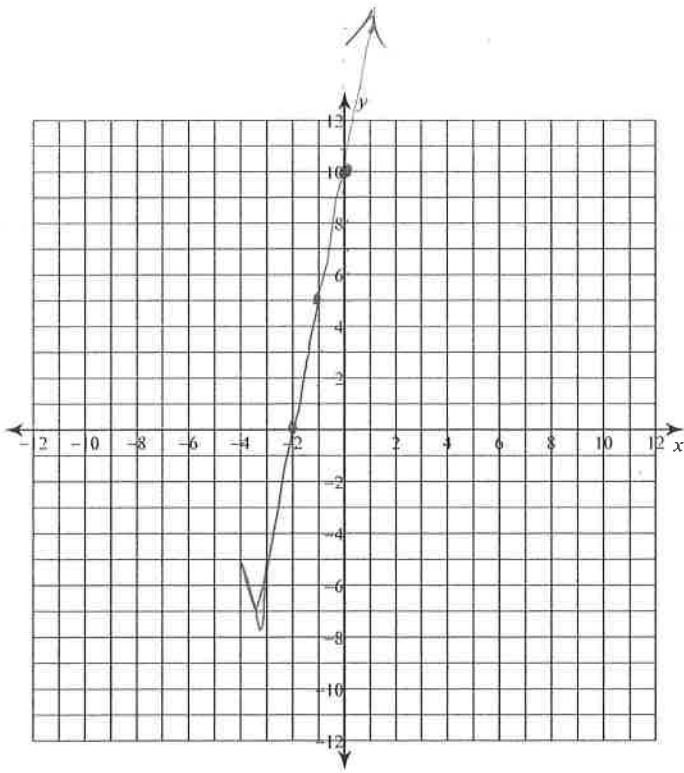


Graph $f(x) = -\frac{2}{3}x + 4$

$-\frac{2}{3}$ ↓
 or $\frac{2}{-3}$ ←

y-int $(0, 4)$

3)



$y = 5x + 10$
↑
 $\frac{5}{1}$ or $\frac{-5}{-1}$ ↑
off of graph
↑
y-int
 $(0, 10)$

4)

