

## MATH 10 UNIT 5.3: LINEAR EQUATIONS

A) What is it?

-an equation that when graphed, will give a straight line

-general form:  $Ax + By = C$ , where  $A, B, C$  are *constants*  
 $x, y$  are *variables*

Ex:

Ex:

B) How to do it?

-drawing a graph from  $Ax+By = C$  is difficult, so using algebra, we write the equation so it becomes  $y=.....$

Ex:  $3x + 2y = -6$

-this is called the *slope-intercept* form:  $y=mx+b$

C) How to draw a linear equation?

i) Table of values

Ex:  $y=x+2$

$$\text{Ex: } y = \frac{2}{3}x - 2$$

$$\text{Ex: } 2x - \frac{1}{3}y = 2$$

ii) directly from the slope-intercept form of the equation

-remember:  $y = mx + b$

$$\text{Ex: } y = 2x + 3$$

$$\text{Ex: } y = 2x - 3$$

$$\text{Ex: } y = -2x + 3$$

$$\text{Ex: } y = \frac{2}{3}x - 2$$

Try: using either the table of values, or directly from the slope-intercept form, graph:

i)  $y = x + 3$

ii)  $y = x - 3$

iii)  $y = -2x + 3$

iv)  $2x + 2y = 6$

-where might we use linear equations? Forensic anthropology...look at bones to see how people lived and died...to find the height of a person based on the radius (bone in the forearm):

$$\text{female height} = 3.343r + 81.224$$

$$\text{male height} = 3.27r + 89.925$$

Do: pg 186 #4, 5, 7

