PROPERTIES OF LINES

1. Use the equations listed below to answer the following

   a) $y = 2x - 2$ b) $y = 2x + 1$

i) What is the slope of each of the lines?
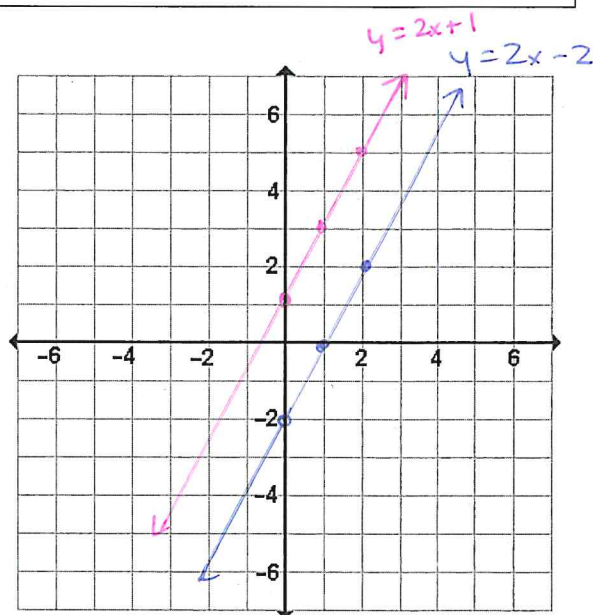   a) $m = \frac{2}{1}$ b) $m = \frac{2}{1}$

ii) Predict if these lines are going to be parallel?

   Yes

iii) Graph the lines. Are the lines parallel?

   Yes

$y = 2x + 1$
$y = 2x - 2$

2. Use the equations listed below to answer the following.

   a) $y = 3x - 2$ b) $y = -2x - 2$

i) What is the slope of each of the lines?
   a) $m = \frac{3}{1}$ b) $m = \frac{-2}{1}$

ii) What is the y-intercept of each line?
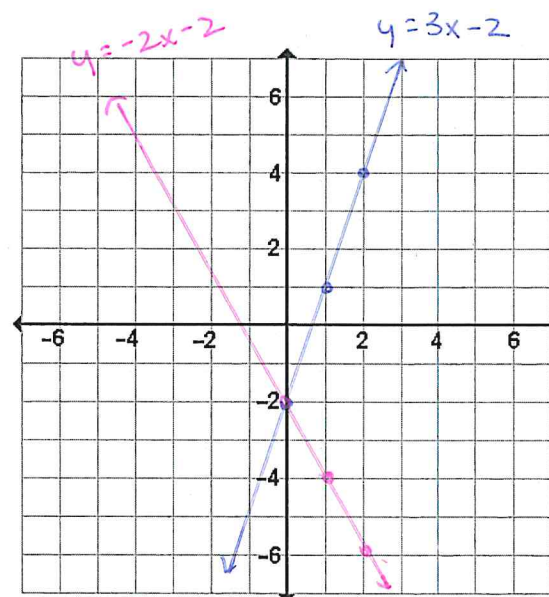   a) $b = -2$ b) $b = -2$

iii) Predict if these lines are going to be parallel?

   No

iv) Graph the lines. Are the lines parallel?

   No

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

3. Consider the following linear equations:

    i) $y = 3x + 4$ ii) $y = 4$ iii) $y = x - 2$ iv) $y = -1$

    v) $y = -x - 5$ vi) $y = -\dfrac{1}{2}x + 5$ vii) $y = \dfrac{1}{3}x + 8$

   a) On each equation above, circle the slope value.
   b) Based on the slope values, write the equation of each line in the appropriate column in the table below

Positive Slope	Negative Slope	Zero Slope
y=3x+4	y= -x-5	y=4
y=x-2	y= -½x+5	y= -1
y= ⅓x+8		

4. Write an equation of a line that is:

   a) Parallel to $y = 4x + 2$ y = 4x - 1

   b) Steeper than $y = -x + 7$ y = -3x + 7
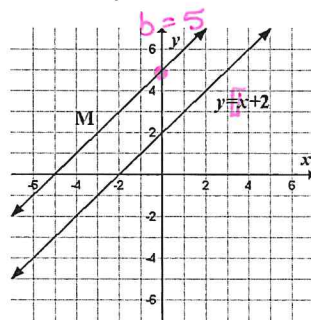
   c) Less steep than $y = 3x - 1$ y = 2x - 1
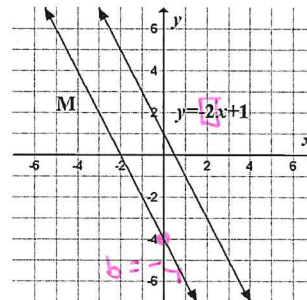
   d) Parallel to $y = -\dfrac{1}{2}x - 6$ y = -½x + 4

5. Write the equation of the line that is parallel to each line given.
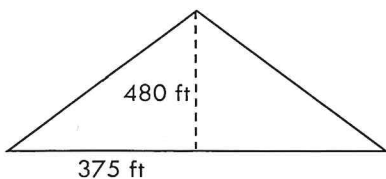
b=5

The equation for line M is

y= x+5

The equation for line M is

y=2x-4

6. A pyramid has a height of 480 ft and a base of 750 ft. Determine the slope of the pyramid. Half of the base is 375 ft.

480 ft

375 ft

$$m = \frac{rise}{run}$$

$$= \frac{480}{375}$$

$$= 1.28$$