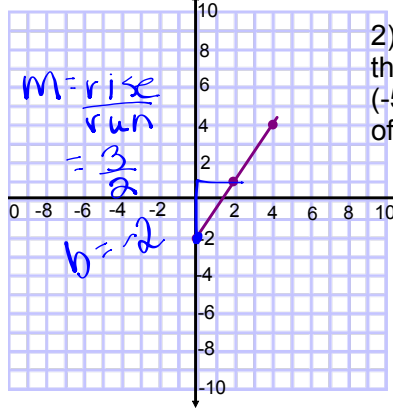


1) Write an equation for the line :



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

2) Write an equation of a line that passes through (-7, 4) and (-5, 10) and has a y intercept of  $\boxed{-5}$ .

$$y = \boxed{-3}x + \boxed{-5}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{10 - 4}{-5 - (-7)} = \frac{6}{2} = 3$$

3) Given the equations

$$y = \boxed{\frac{2}{5}}x + \boxed{6}$$

- i) Slope  $\frac{2}{5}$
- ii) y-intercept  $(0, 6)$
- iii) x-intercept  $(-15, 0)$

$$0 = \frac{2}{5}x + 6$$

$$-6 = \frac{2}{5}x$$

$$\frac{-30}{2} = \frac{2x}{2}$$

$$\boxed{x = -15}$$

$$\boxed{\frac{-6}{3}} = -2$$

$$\boxed{\frac{2}{4}} = \frac{1}{2}$$

1 a)  $m = \frac{\text{rise}}{\text{run}}$

b) undefined

c) zero

2.  $m = \frac{y_2 - y_1}{x_2 - x_1}$

3.  $m = \frac{\text{rise}}{\text{run}}$

4. a)  $m_{EF} = \frac{5 - (-1)}{-1 - (-4)}$

$$= \frac{6}{3} = \underline{2}$$

perp.

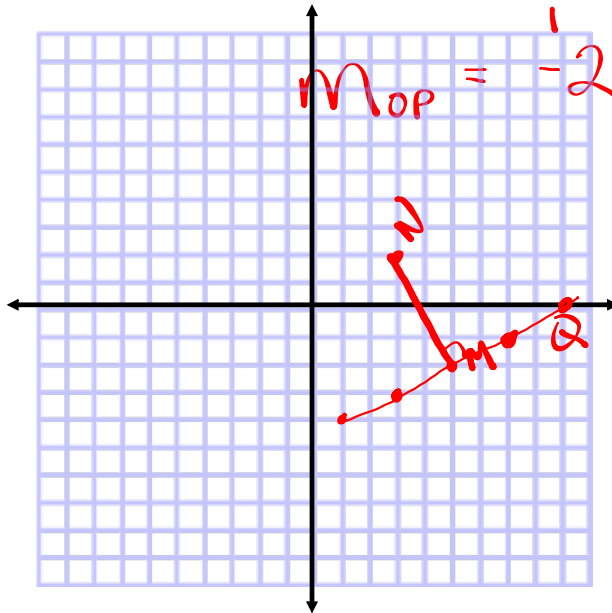
$$m_{GH} = \frac{-1 - 1}{5 - 1} = \frac{-2}{4} = -\frac{1}{2}$$

5.  $m = \frac{y_2 - y_1}{x_2 - x_1} = -2$  (5, -2)

$m_{MN} = -\frac{2}{1} = -2$

$m_{MQ} = \frac{1}{2}$

$m_{OP} = -2$



Q(9, 0)

Pg 349 #16

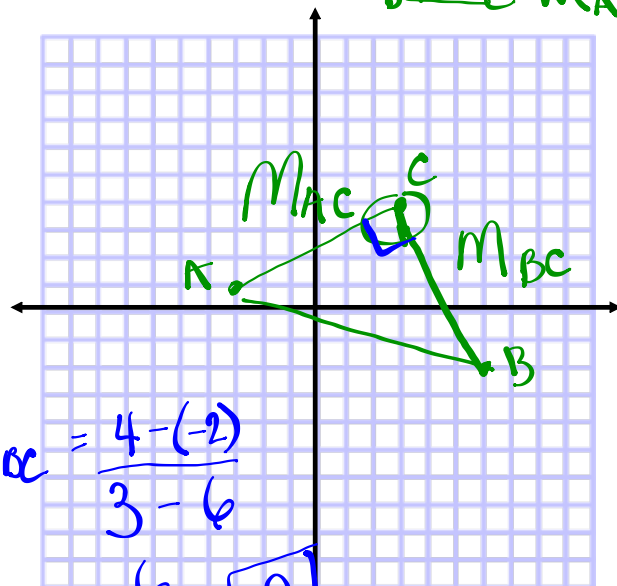
A  $(x_1, y_1)$   
A (-3, 1)

B  $(x_2, y_2)$   
B (6, -2)

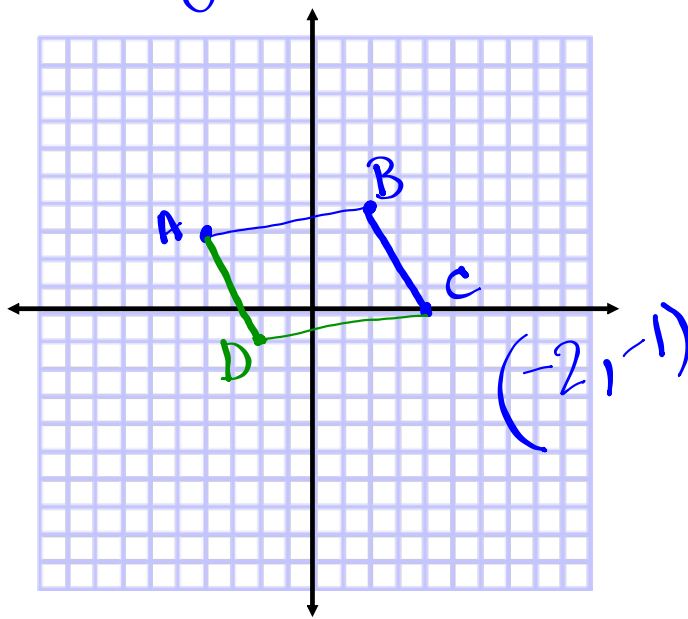
C  $(x_2, y_2)$   
C (3, 4)

$m_{AC} = \frac{4 - 1}{3 - (-3)}$   
 $= \frac{3}{6} = \frac{1}{2}$

$m_{BC} = \frac{4 - (-2)}{3 - 6}$   
 $= \frac{6}{-3} = -2$



Pg 351 #19



$$A \begin{pmatrix} x_1 & y_1 \\ -4 & 3 \end{pmatrix}$$

$$B \begin{pmatrix} x_2 & y_2 \\ 2 & 4 \end{pmatrix}$$

$$C \begin{pmatrix} x_1 & y_1 \\ 4 & 0 \end{pmatrix}$$

$$D \ ?$$

$$m_{AB} = \frac{4-3}{2-(-4)} = \frac{1}{6}$$

$$m_{BC} = \frac{4-0}{2-4} = \frac{4}{-2} = -2$$

Not a rectangle.

### Point - Slope Form

You can also find the equation of a line if you are given a point and the slope of the line. In order to do this you use the formula:

You need a  
-Point & a Slope

$$y - y_1 = m(x - x_1)$$

slope

$(x_1, y_1)$

any point given to you

The x and y values from the given point

This equation can be rearranged

to  $y = mx + b$

(slope intercept)

**Example 1:**

Find the equation of a line that passes through  $(-3,4)$  and has the same slope as  $y = 3x + 2$ .

$$m = 3$$

Write what you know:

$$y - y_1 = m(x - x_1)$$

$m = 3$        $(x_1, y_1)$   
 $(-3, 4)$

$$y - 4 = 3(x - (-3))$$

$$y - 4 = 3(x + 3) \quad \text{Point Slope Form}$$

$$y - 4 = 3x + 9$$

$$y - 4 + 4 = 3x + 9 + 4$$

$$y = 3x + 13 \quad \text{Slope Intercept Form}$$

## Attachments

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Point slope form.docx