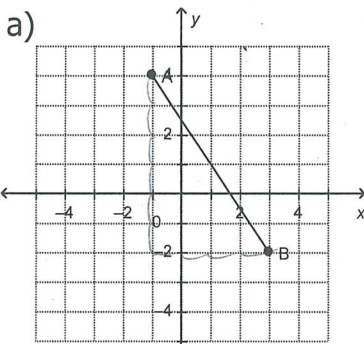
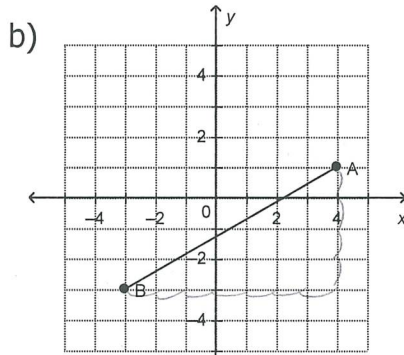


## Ch. 6 Review

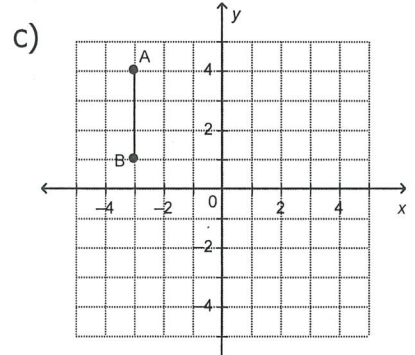
1. Determine the slope of each of the following line segments.



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



Slope =  $\frac{4}{6} = \frac{2}{3}$



Slope = undefined

2. Determine the slope of the line passing through each of the following pairs of points.

a) A(3, 6) and B(7, 10)

slope AB =  $\frac{10-6}{7-3} = \frac{4}{4} = 1$

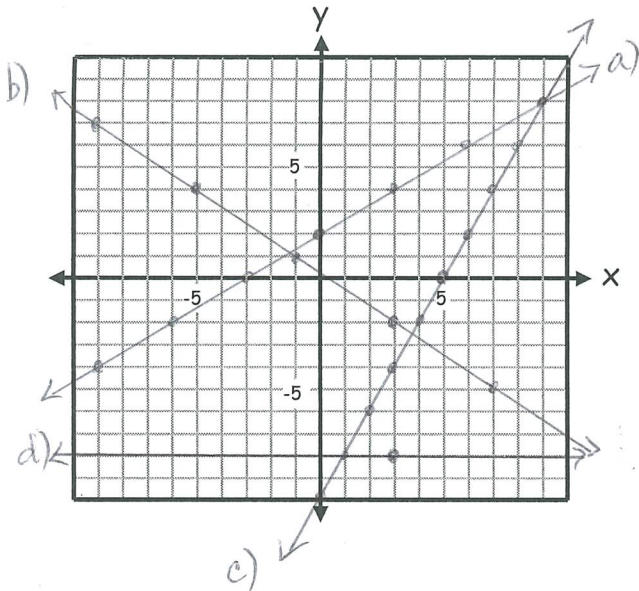
Slope = 1

b) C(2, -3) and D(-2, 5)

slope CD =  $\frac{5-(-3)}{-2-2} = \frac{8}{-4} = -2$

Slope = -2

3. Draw lines which each given slope, passing through each given point, on the grid below.



a)  $m = \frac{2}{3}$ , passing through (0, 2)

b)  $m = -\frac{3}{4}$ , passing through (-5, 4)

c)  $m = 2$ , passing through (5, 0)

d)  $m = 0$ , passing through (3, -8)

4. The slope of AB is
- $\frac{2}{3}$
- . Determine the slope of a line that is

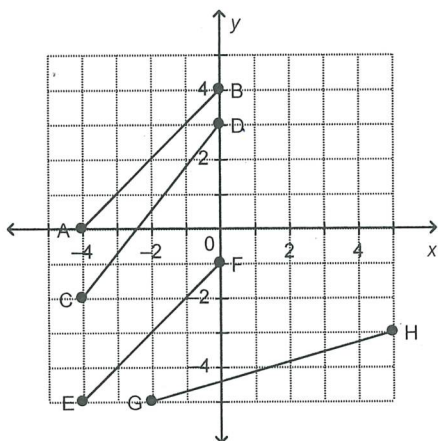
a) parallel to AB.

$\frac{2}{3}$

b) perpendicular to AB.

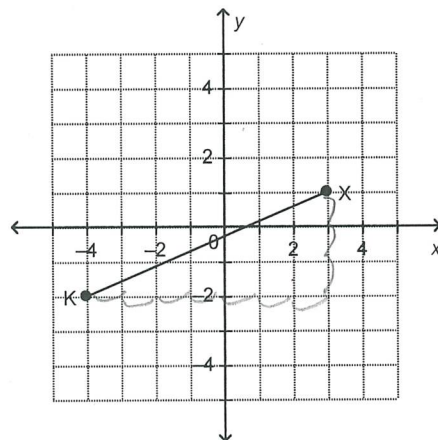
$-\frac{3}{2}$

5. Which of the following line segments are parallel? What are their slopes?



Line segments: AB || EF Slope = 1

6. What is the slope of a line that is perpendicular to the line segment shown below?



Slope =  $-\frac{7}{3}$

7. Line segment AB has endpoints A(-4, -1) and B(-1, 5). Line segment CD has endpoints C(1, 1) and D(5, -1). Are AB and CD parallel, perpendicular, or neither?

Explain.

$$\text{Slope AB} = \frac{5 - (-1)}{-1 - (-4)} = \frac{6}{3} = 2$$

$$\text{Slope CD} = \frac{1 - (-1)}{1 - 5} = \frac{2}{-4} = -\frac{1}{2}$$

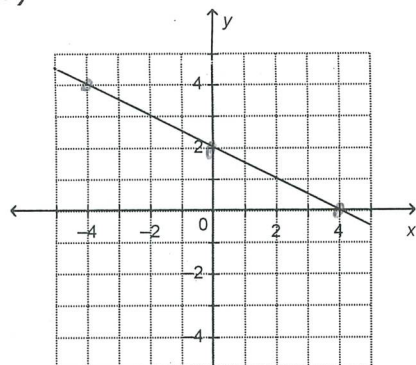
AB  $\perp$  CD because their slopes are negative reciprocals of each other.

8. Write the equation of a line with a slope of -2 and a y-intercept of 5.

$$y = \underline{-2x + 5}$$

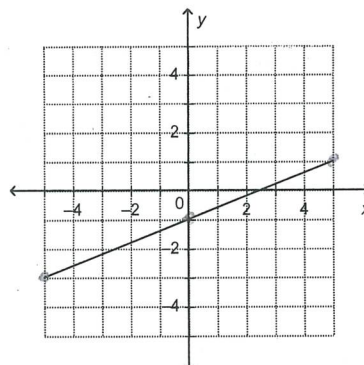
9. Write the equation of each of the following lines in slope-intercept form.

a)



$$y = \underline{-\frac{1}{2}x + 2}$$

b)

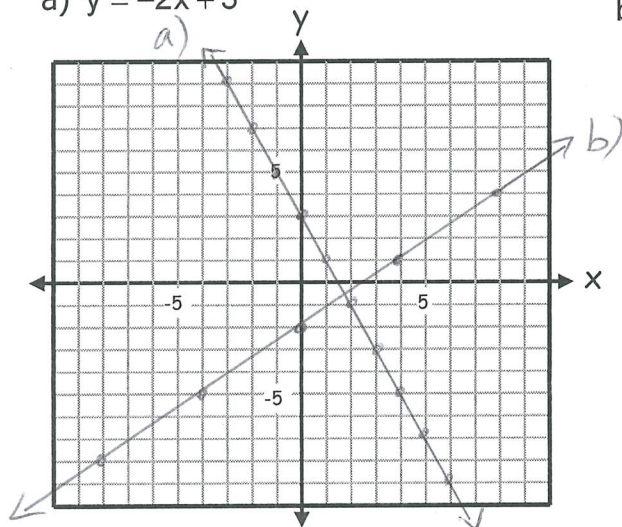


$$y = \underline{\frac{2}{5}x - 1}$$

10. Graph the following lines on the grid below:

a)  $y = -2x + 3$

b)  $y = \frac{3}{4}x - 2$



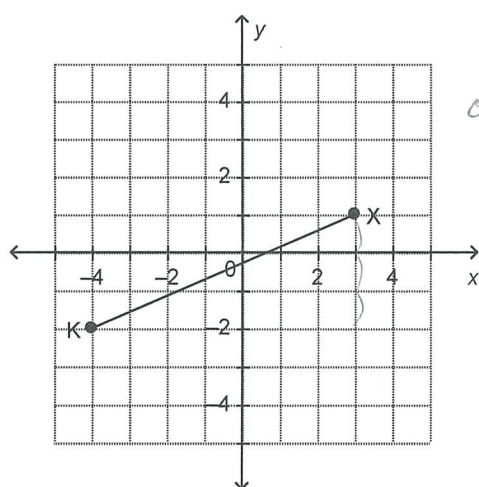
11. Describe the graph of the equation  $y - 3 = \frac{2}{3}(x - 5)$ .

a line that has slope  $\frac{2}{3}$ , passing through the point (5, 3).

12. A line has a slope of  $-3/4$  and passes through the point  $(-2, 6)$ . Write its equation in slope-point form.

$$y - 6 = -\frac{3}{4}(x + 2)$$

13. Write the equation of the line shown below in slope-point form, then convert the equation to slope-intercept form.



$$\begin{aligned} y - 1 &= \frac{3}{7}(x - 3) \\ \text{or } y + 2 &= \frac{3}{7}(x + 4) \end{aligned} \quad \left. \vphantom{\begin{aligned} y - 1 &= \frac{3}{7}(x - 3) \\ y + 2 &= \frac{3}{7}(x + 4) \end{aligned}} \right\} \text{ slope point form}$$

$$[y + 2 = \frac{3}{7}(x + 4)] \times 7$$

$$7y + 14 = 3(x + 4)$$

$$7y = 3x + 12 - 14$$

$$7y = 3x - 2$$

$$y = \frac{3}{7}x - \frac{2}{7}$$

14. Line AB is represented by the equation  $y = 2x + 5$ .

a) Write the equation of a line that is parallel to AB and passes through the point  $(1, -3)$ . Answer in slope-point form.

$$y + 3 = 2(x - 1)$$

b) Write the equation of a line that is perpendicular to AB and passes through the point  $(1, -3)$ . Answer in slope-point form.

$$y + 3 = -\frac{1}{2}(x - 1)$$

15. Determine the equation of a line that passes through the points  $(-3, 4)$  and  $(1, 5)$

a) in slope-point form.

$$\text{slope} = \frac{5 - 4}{1 - (-3)} = \frac{1}{4}$$

$$y - 4 = \frac{1}{4}(x + 3)$$

$$\text{or } y - 5 = \frac{1}{4}(x - 1)$$

b) in slope-intercept form.

$$y = \frac{1}{4}x - \frac{1}{4} + \frac{5 \times 4}{1 \times 4}$$

$$y = \frac{1}{4}x + \frac{19}{4}$$

$$\text{or } y = \frac{x}{4} + \frac{19}{4}$$



16. Identify the form each equation is in, then change to general form.

a)  $5x - 2y = 10$  ← standard form

$$5x - 2y - 10 = 0$$

b)  $y + 1 = \frac{2}{5}(x - 3)$  ← slope point form

$$\left( y + 1 = \frac{2}{5}(x - 3) \right) \times 5$$

$$5y + 5 = 2(x - 3)$$

$$5y + 5 = 2x - 6$$

$$0 = 2x - 5y - 11$$

c)  $y = \frac{3}{4}x - 2$  ← slope - intercept form

$$\left( y = \frac{3}{4}x - 2 \right) \times 4$$

$$4y = 3x - 8$$

$$0 = 3x - 4y - 8$$

17. Determine the slope of the line with this equation:  $3x - 2y + 8 = 0$ .

$$3x + 8 = 2y$$

$$y = \frac{3}{2}x + 4$$

$$\therefore \text{slope} = \frac{3}{2}$$

18. Calculate the x and y-intercepts, then graph the line  $2x - 3y + 12 = 0$ .

x-int:  $2x - 3(0) + 12 = 0$

$$2x + 12 = 0$$

$$2x = -12$$

$$x = -6$$

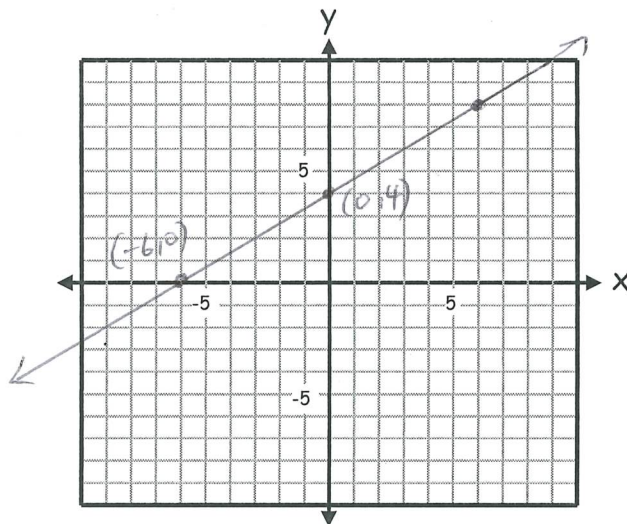
$$(-6, 0)$$

y-int:  $2(0) - 3y + 12 = 0$

$$12 = 3y$$

$$y = 4$$

$$(0, 4)$$



AND REVIEW CHAPTER 3 (ON FACTORING) AND CHAPTER 2 (TRIGONOMETRY).