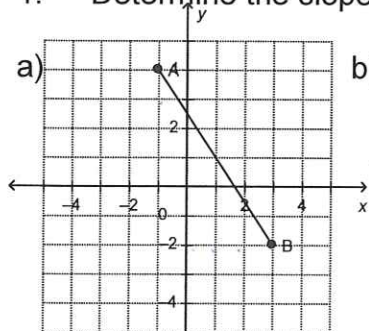
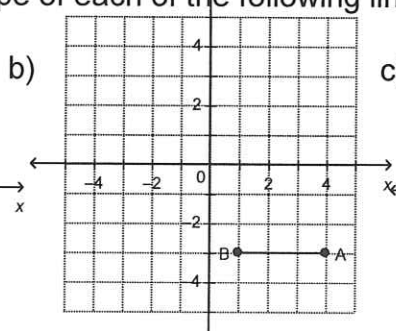


Leave slopes as fully simplified fractions where appropriate.

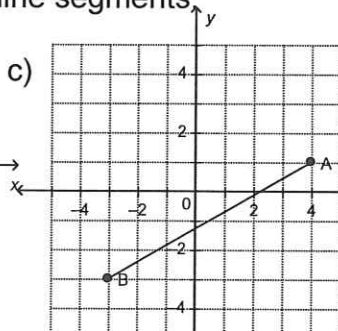
1. Determine the slope of each of the following line segments.



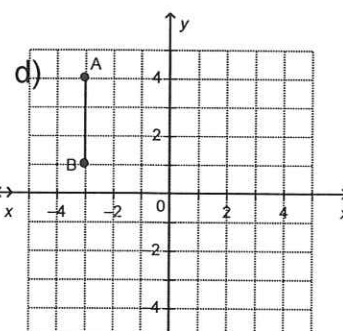
a) $\frac{-6}{4} = -\frac{3}{2}$



b) 0



c) $\frac{4}{7}$



d) 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)

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

a) 1

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

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

b) -2

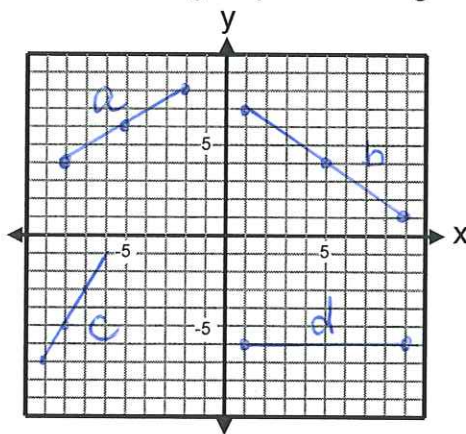
3. Draw and label line segments with each of the following slopes on the grid below.

a) $\frac{2}{3}$

b) $-\frac{3}{4}$

c) 2

d) 0



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

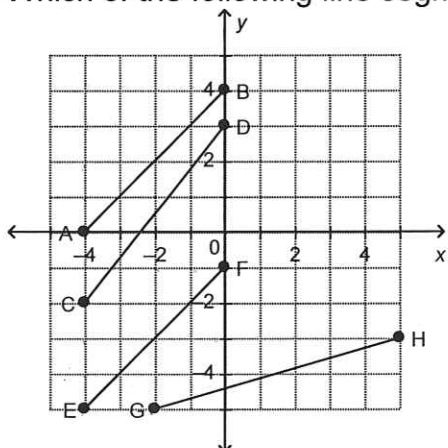
a) parallel to AB.

a) $-\frac{2}{3}$

b) perpendicular to AB.

b) $\frac{3}{2}$

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



Parallel: AB || EF

Slopes:

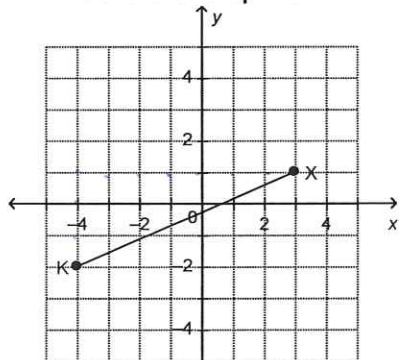
AB: 1

CD: $\frac{5}{4}$

EF: 1

GH: $\frac{2}{7}$

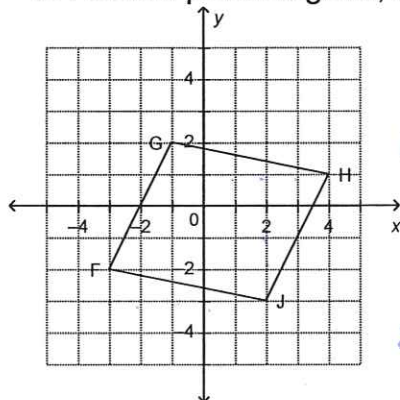
6. What is the slope of a line that is perpendicular to the line segment shown below?



slope $KX = \frac{3}{7}$

perpendicular slope = $-\frac{7}{3}$

7. Is FGHI a parallelogram, a rectangle, or neither? Explain.



slope GI: $-\frac{1}{5}$

slope HI: $\frac{4}{2} = 2$

slope FI: $-\frac{1}{5}$

slope FG: $\frac{4}{2} = 2$

A parallelogram because opposite sides have equal slopes, meaning they are parallel.

8. 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.

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

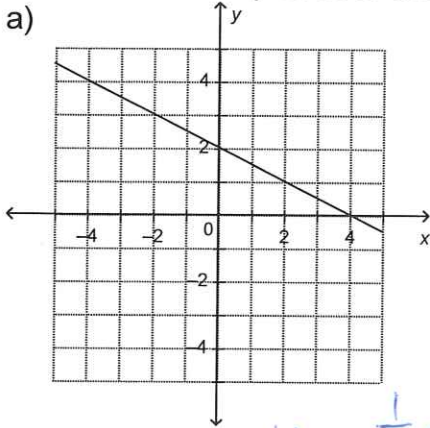
slope CD: $\frac{-1 - 1}{5 - 1} = \frac{-2}{4} = -\frac{1}{2}$

They are perpendicular because their slopes are negative reciprocals

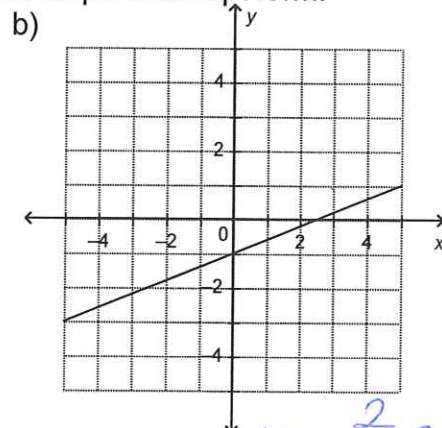
9. Write the equation of a line with a slope of -2 and a y-intercept of 5.

$y = -2x + 5$

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



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

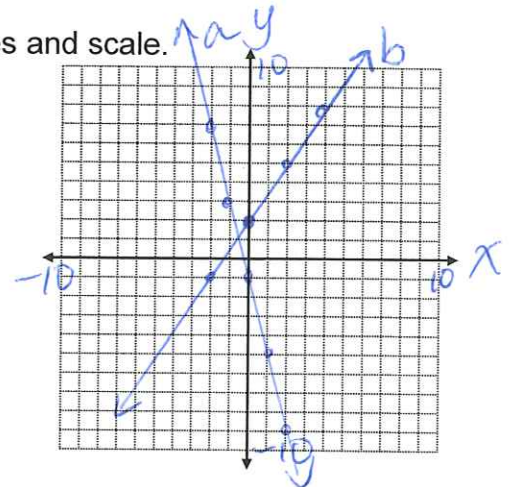


b) $y = \frac{2}{5}x - 1$

11. Graph and label the following lines on the grid. Label axes and scale.

a) $y = -4x - 1$

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



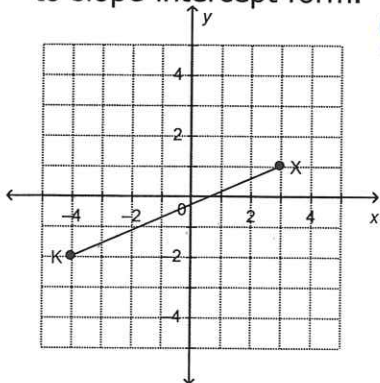
12. Describe the graph of the equation $y - 3 = \frac{2}{3}(x - 5)$

A line with a slope of $\frac{2}{3}$ that passes through the point (5, 3)

13. A line has a slope of $-\frac{3}{4}$ and passes through the point (-2, 6). Write its equation in slope-point form.

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

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



slope = $\frac{3}{7}$
point (3, 1)

$$y - 1 = \frac{3}{7}(x - 3)$$

$$y = \frac{3}{7}x - \frac{9}{7} + 1$$

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

15. 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.

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

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

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

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

standard form
a) $5x - 2y = 10$

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

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

$$5y+5 = 2x-6$$
$$2x - 5y - 11 = 0$$

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

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

17. Change this equation to slope-intercept form: $3x - 5y + 8 = 0$

$$5y = 3x + 8$$
$$y = \frac{3}{5}x + \frac{8}{5}$$

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

x-int: let $y=0$
 $2x+12=0$
 $2x=-12$ $(-6, 0)$
 $x=-6$

y-int: let $x=0$
 $-3y+12=0$
 $-3y=-12$
 $y=4$ $(0, 4)$

