1. Determine the slope of each line: AB, AC, AD, AE, AF, AG.

Slope AB = $\dfrac{5}{8}$

Slope AC = $\dfrac{3}{8}$

Slope AD = $\dfrac{1}{8}$

Slope AE = $\dfrac{0}{8} = 0$

Slope AF = $\dfrac{-2}{8} = \dfrac{-1}{4}$

Slope AG = $\dfrac{-5}{8}$
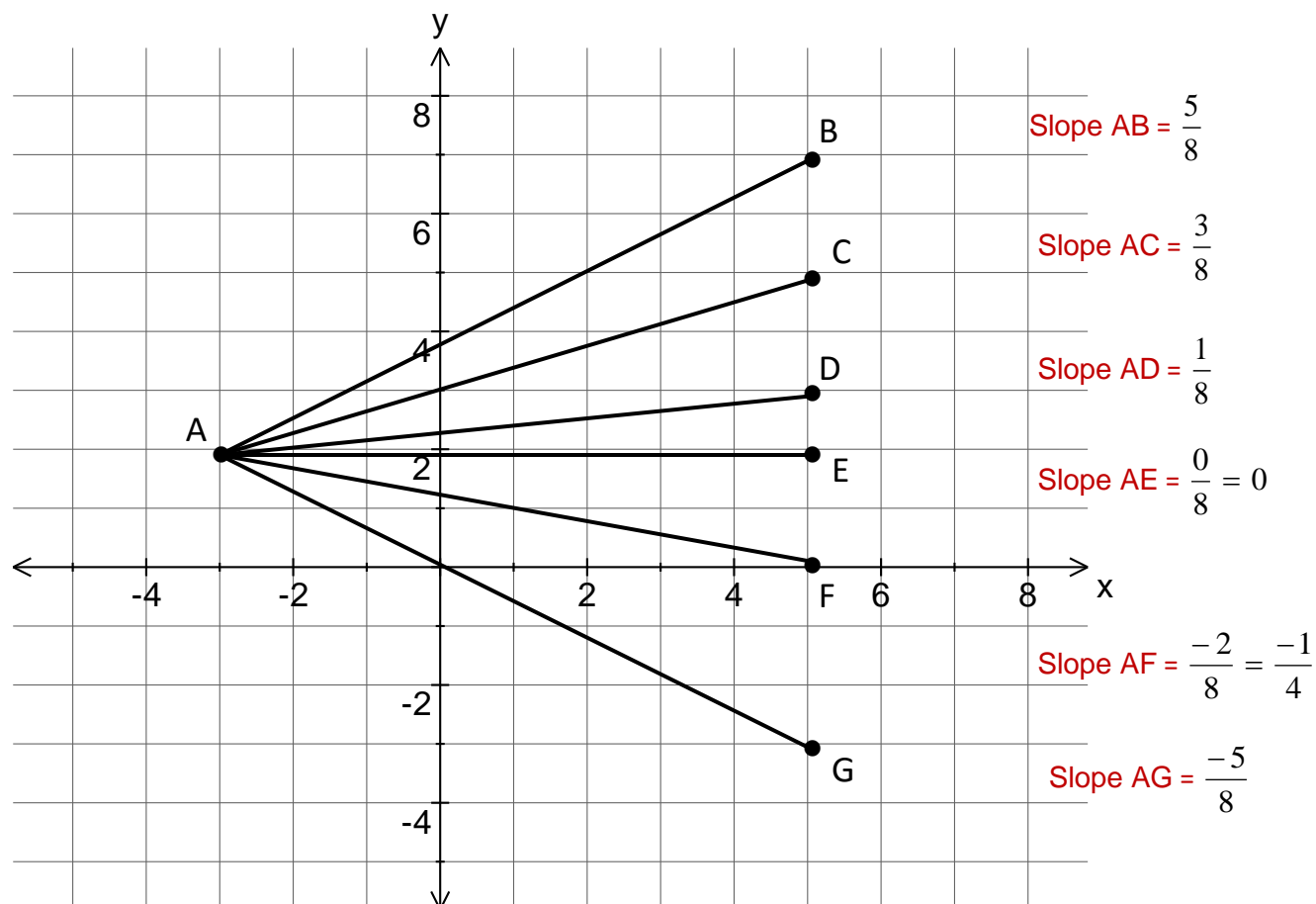
2. Without graphing determine the slope between each pair of points.

a)   A(− 2, 7) and B(6,− 4) $\dfrac{-11}{8}$

b)   L(4, − 3) and M(7, − 7) $\dfrac{-4}{3}$

3. Write the equation of each line in slope-intercept form.

a) That has a y-intercept of − 5 and a slope of 3. $y = 3x - 5$

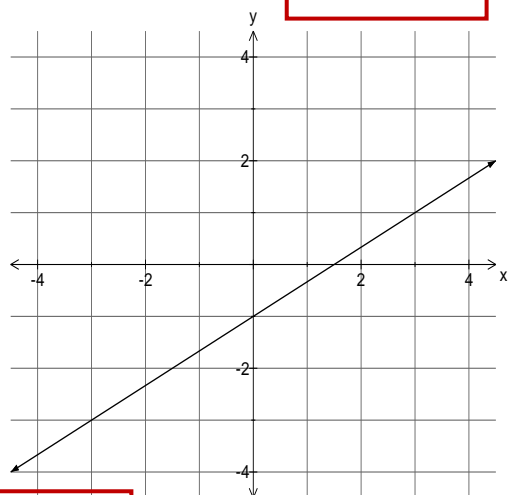b) That passes through the point (− 2, 3) and has a slope of $\dfrac{1}{2}$. $y = \dfrac{1}{2}x + 4$

c) That passes through the point (− 4, 3) and has a slope perpendicular to the line
$y = -\dfrac{4}{5}x + 1$. $y = \dfrac{5}{4}x + 8$
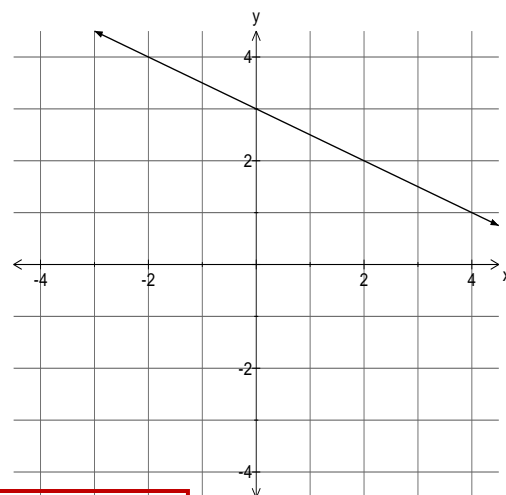
d)

$y = \dfrac{2}{3}x - 1$
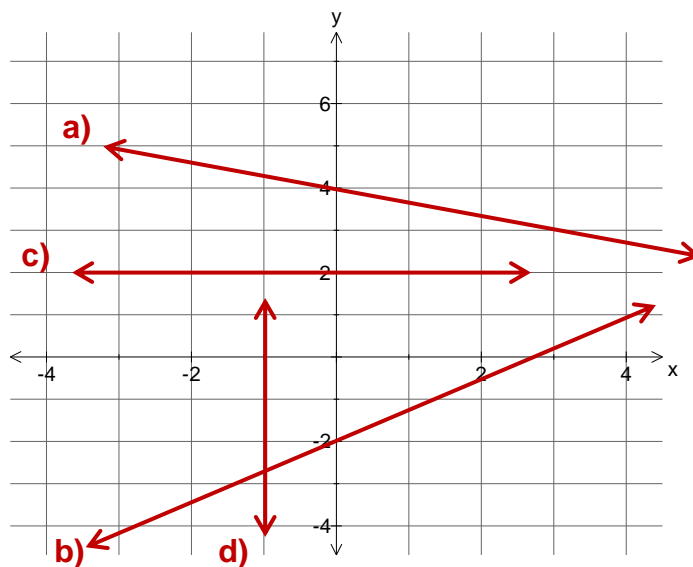
e)

$y = \dfrac{-1}{2}x + 3$

4. Graph each line on the grid provided.

   a) $y = -\dfrac{1}{3}x + 4$

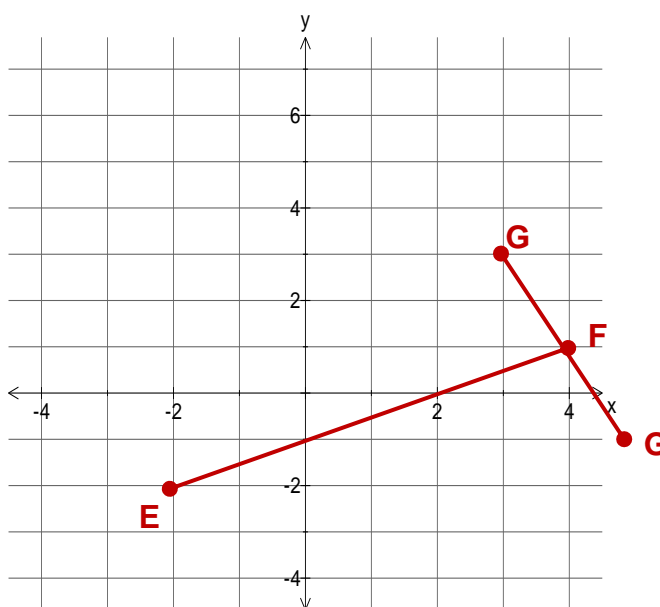   b) $y = \dfrac{3}{4}x - 2$

   c) $y = 2$

   d) $x = -1$

5a). Plot the points E(− 2, − 2) and F(4, 1). Sketch the line EF.

   b) Determine the coordinates of point G, so that the line FG is perpendicular to EF.

   Two possible answers for the coordinates of G are: (3, 3) or (5, − 1)

6. Draw the quadrilateral ABCD on the grid and determine whether or not it is a rectangle. JUSTIFY your answer. A(5, 1) B(− 4, 4) C(− 6, − 2) D (3, − 5)

Slope AB = $\dfrac{-3}{9} = \dfrac{-1}{3}$ ⎫ Same slope parallel

Slope CD = $\dfrac{-3}{9} = \dfrac{-1}{3}$ ⎭

Slope BC = $\dfrac{6}{2} = 3$ ⎫ Same slope parallel

Slope AD = $\dfrac{6}{2} = 3$ ⎭

Opposite sides are parallel. They have the same slope.

Adjacent sides have negative reciprocal slopes $\dfrac{-1}{3}$ *and* 3 which means they are perpendicular and meet at 90^0.

So it's a rectangle!