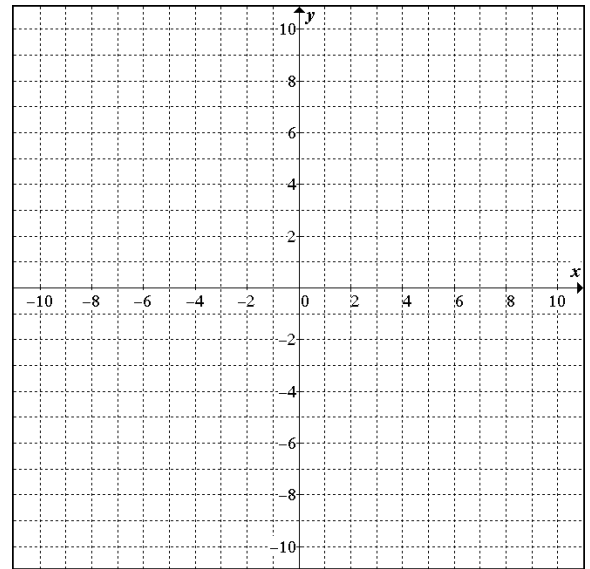1. Determine the slopes of the line segments joining the following pairs of points:

   a) A(1,–1) and B(–3,3)   b) C(4,–1) and D(4,–6)

2. a) Calculate the slopes of the line segments joining P(0,0) to Q(5,–6) and R(3,0) to S(–2,5) and determine if they are parallel.

   b) Calculate the slopes of the 3 sides of ΔABC given the points A(–3,1), B(–1,5), C(5,2) and determine if ΔABC is a right triangle.

3. Sketch all three lines on the same Cartesian plane, using the method indicated.

   a) $y = 3x - 5$ using table of values

   b) $y = \dfrac{2}{3}x + 1$ using slope-intercept

   c) $2x + 3y - 6 = 0$ using x and y-intercepts

4. Determine the equations of the following lines. Practice proper solutions.

   a) through the points A(2, 4) and B(1,5)

   b) through the point A(–1, 2) with a slope of $-\frac{1}{3}$

   c) through the point A(3, 2) and parallel to the line $y = 2x - 7$

   d) through the point A(–1, 5) and perpendicular to the line $y = 4x + 1$

   e) with a y-intercept of 5 and passing through P(2, 3)

   f) with an x-intercept of 5 and passing through P(2, 3)

5. Determine the equation of the line with y-intercept of -2 that is:

   a) parallel to $3x - y - 5 = 0$ b) perpendicular to $2x + y + 4 = 0$

6. Determine the intersection of the following pair of lines: $2x - 3y = 5$ and $y = 3x + 3$.

7. If the point $P(-3,7)$ lies on the line $2x + ky - 8 = 0$, determine the value of $'k'$.

Answers:

1. a) -1 b) Does not exist

2. a) they are not parallel   b) it is a right triangle

4. a) $y = -x + 6$ b) $y = -\frac{1}{3}x + \frac{5}{3}$ c) $y = 2x - 4$ d) $y = -\frac{1}{4}x + \frac{19}{4}$

   e) $y = -x + 5$ f) $y = -x + 5$

5. a) $y = 3x - 2$ b) $y = \frac{1}{2}x - 2$ 6. $(-2,-3)$ 7. 2