Working with the Slope Formula:

The slope, m, of a line AB, where A has coordinates (x_1, y_1) and B has coordinates (x_2, y_2), and x does not $= 0$, is the ratio of the difference of the y-values to the difference of the corresponding x-values.

Slope: $m = \dfrac{y_2 - y_1}{x_2 - x_1}$ or $\dfrac{\Delta y}{\Delta x}$

There are four types of slope you can have:
1) Positive Slope – as a point moves from left to right along a line that is rising, y increases as x increases.
        Example:

2) Negative Slope – as a point moves from left to right along a line that is falling, y decreases as x increases.
        Example:

3) Zero Slope – a line parallel to the x-axis (horizontal line)
        Example:

4) No Slope – a line parallel to the y-axis (vertical line)
        Example:

*** Parallel lines have the same slope.
*** Perpendicular lines have slopes that are negative reciprocals of each other.

Examples:
1) Given line AB where A(2,2) and B(4,5). Find the slope of the line.

2) Find the value of k so that that the slope of the line passing through the points (2,3) and (k,4) will be 1/3

3) Find the slope of the line that passes through the points C(-2,1) and D(0,4).

4) Line CD passes through the points (-4,-2) and (8,7). A) Find the slope. B) Does line CD pass through the point (11,11)?

5) Find the slope of the line that passes through A(4,-2) and B(1,5).

6) Using A(-2,1) and B(1,2). State how CD is related to AB given C(-1,3) and D(0,0). Prove & explain.

7) Given A(-2,1) and B(1,2), how is line CD related to line AB when C(2,1) and D(5,2). Prove & explain.

8) The vertices of a triangle are (-3,-1), (-3,5), and (6,-1). Find the slope of each side of the triangle. What kind of triangle do you have?

Find the slope of the given points:
1) O(3,7) & P(9,3)   2) Q(-1,-7) & R(6,4)

3) V(-3,-6) & U(-3,-9)

4) T(-2,-9) & S(-9,3)

5) W(2,-1) & X(-5,-1)

6) Y(13,14) & Z(14,15)

7) D(-4,2) & C(-5,0)

8) B(0,0) & A(-7,-8)

9) E(22.2,12.9) & F(-2.3,-7.6)

10) G(21.34,-6) & H(5.1,8.67)