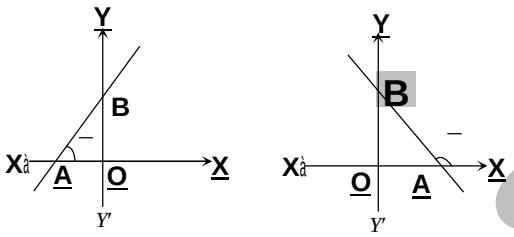
10.2 Slope (Gradient) of a line

The trigonometrical tangent of the angle that a line makes with the positive direction of the x-axis in anticlockwise sense is called the slope or gradient of the line. The slope of a line is generally denoted by m. Thus, $m = \tan^{-}$.



(1) Slope of line parallel to x – axis is $m = \tan 0^{o} = 0$.

(2) Slope of line parallel to y – axis is $m = \tan 90^{o} = \infty$.

(3) Slope of the line equally inclined with the axes is 1 or – 1.

(4) Slope of the line through the points $A(x_1, y_1)$ and $B(x_2, y_2)$ is $\frac{y_2 - y_1}{x_2 - x_1}$ taken in the same order.

(5) Slope of the line $ax + by + c = 0, b \neq 0$ is $-\frac{a}{b}$.

(6) Slope of two parallel lines are equal.

(7) If m_1 and m_2 be the slopes of two perpendicular lines, then $m_1 . m_2 = -1$.

(8) m can be defined as $\tan^{-}$ for $0 \leq^{-} \leq$® and $^{-} \neq \frac{®}{2}$.