Chapter-08

Introduction to Trigonometry

- Trigonometry is the branch of Mathematics which deals with the measurement of sides and angles of the triangles.
- In a right triangle ABC, right-angled at B,
- sin A = $\frac{side\ opposite\ to\ angle\ A}{hypotenuse}, \cos A = \frac{side\ opposite\ to\ angle\ A}{hypotenuse}$

  s $\tan A = \frac{side\ opposite\ to\ angle\ A}{side\ adjacent\ to\ angle\ A}$

  $\cos ec\ A = \frac{1}{\sin A}; \sec A = \frac{1}{\cos A}$

  $\tan A = \frac{1}{\cot A}, \tan A = \frac{\sin A}{\cos A}$
- If one of the trigonometric ratios of an acute angle is known, the remaining trigonometric ratios of the angle can be easily determined.
- The values of trigonometric ratios for angles 0°, 30°, 45°, 60° and 90°.
- The value of sin A or cos A never exceeds 1, whereas the value of sec A or cosec A is always greater than or equal to 1.
- sin (90° – A) = cos A, cos (90° – A) = sin A;
- tan (90° – A) = cot A, cot (90° – A) = tan A;
- sec (90° – A) = cosec A, cosec (90° – A) = sec A.
- $\sin^2$ A + cos2 A = 1,
- $\sec^2$ A – tan2 A = 1 for 0° ≤ A < 90°,
- $\cos ec^2$ A = 1 + cot2 A for 0° < A ≤ 90º.