6. TRIGONOMETRY
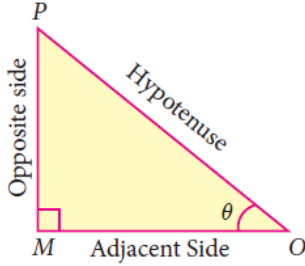
Learning Outcomes:

⌘ To recall trigonometric ratios.

⌘ To recall fundamental relations between the trigonometric ratios of an angle.

⌘ To recall trigonometric ratios of complementary angles.

⌘ To understand trigonometric identities.

⌘ To know methods of solving problems concerning heights and distances of various objects.

Let $0° < \theta < 90°$

	Let us take right triangle OMP $\sin\theta = \dfrac{\text{Opposite side}}{\text{Hypotenuse}} = \dfrac{MP}{OP}$ $\cos\theta = \dfrac{\text{Adjacent side}}{\text{Hypotenuse}} = \dfrac{OM}{OP}$

From the above two ratios we can obtain other four trigonometric ratios as follows.

$$\tan\theta = \frac{\sin\theta}{\cos\theta}; \ \cot\theta = \frac{\cos\theta}{\sin\theta};$$

$$\mathrm{cosec}\theta = \frac{1}{\sin\theta}; \ \sec\theta = \frac{1}{\cos\theta}$$