Concepts and Formulas

Trigonometric Functions

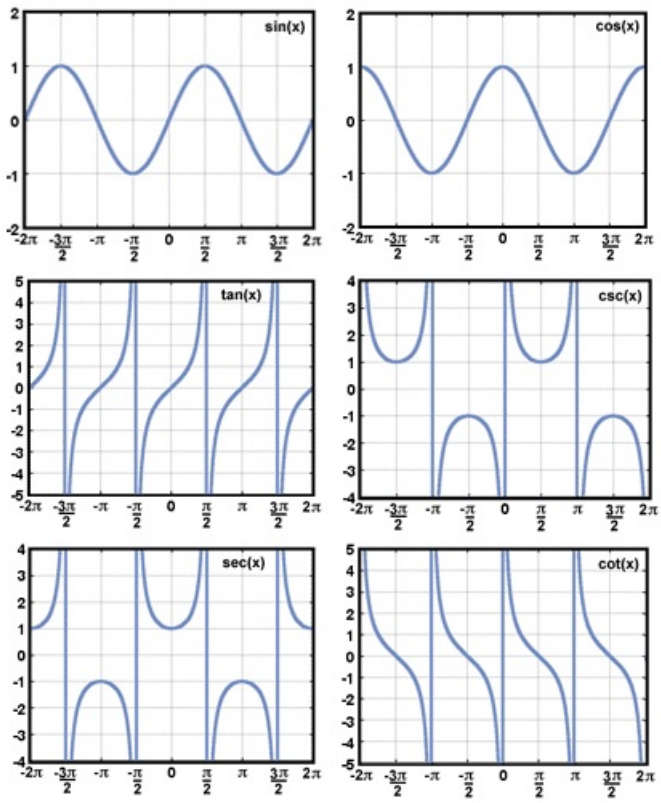
Basic Trigonometric Identities

(a) $\sin^2\theta + \cos^2\theta = 1 : -1 \leqslant \sin\theta \leqslant 1; -1 \leqslant \cos\theta \leqslant 1 \forall \theta \in \mathrm{R}$

(b) $\sec^2\theta - \tan^2\theta = 1 : |\sec\theta| \geqslant 1 \forall \theta \in \mathrm{R}$

(c) $\mathrm{cosec}^2\theta - \cot^2\theta = 1 : |\mathrm{cosec}\,\theta| \geqslant 1 \forall \theta \in \mathrm{R}$

Trigonometry Function Graphs



Trigonometric Functions of Sum or Difference of Two Angles

(a) $\sin(\mathrm{A} + \mathrm{B}) = \sin\mathrm{A}\cos\mathrm{B} + \cos\mathrm{A}\sin\mathrm{B}$

(b) $\sin(\mathrm{A} - \mathrm{B}) = \sin\mathrm{A}\cos\mathrm{B} - \cos\mathrm{A}\sin\mathrm{B}$

(c) $\cos(A + B) = \cos A\cos B - \sin A\sin B$

(d) $\cos(\mathrm{A} - \mathrm{B}) = \cos\mathrm{A}\cos\mathrm{B} + \sin\mathrm{A}\sin\mathrm{B}$