

TRIGONOMETRY REFERENCE SHEET

Standard Waveforms, Functions, and Identities

Sine: $f(x) = \sin(x)$

- Period: 2π
- Domain: $(-\infty, \infty)$
- Range: $[-1, 1]$
- Odd Function: $\sin(-x) = -\sin(x)$

Cosine: $f(x) = \cos(x)$

- Period: 2π
- Domain: $(-\infty, \infty)$
- Range: $[-1, 1]$
- Even Function: $\cos(-x) = \cos(x)$

Tangent: $f(x) = \tan(x)$

- Period: π
- Vertical Asymptotes: $\pi/2 + k\pi$
- $\tan(x) = \sin(x) / \cos(x)$

Pythagorean Identities

- $\sin^2 \theta + \cos^2 \theta = 1$
- $1 + \tan^2 \theta = \sec^2 \theta$
- $1 + \cot^2 \theta = \csc^2 \theta$

Reciprocal Identities

- $\csc(x) = 1 / \sin(x)$
- $\sec(x) = 1 / \cos(x)$
- $\cot(x) = 1 / \tan(x)$

Double Angle Formulas

- $\sin(2\theta) = 2\sin\theta\cos\theta$

- $\cos(2\hat{\theta}) = \cos^2\hat{\theta} - \sin^2\hat{\theta}$
- $\tan(2\hat{\theta}) = 2\tan\hat{\theta} / (1 - \tan^2\hat{\theta})$

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