

Lesson 1

TRIG REVIEW

Unit circle

$$\sin 30^\circ =$$

$$\cos 30^\circ =$$

$$\tan 30^\circ =$$

$$\sin 45^\circ =$$

$$\cos 45^\circ =$$

$$\tan 45^\circ =$$

$$\sin 60^\circ =$$

$$\cos 60^\circ =$$

$$\tan 60^\circ =$$

$$\sin 90^\circ =$$

$$\cos 90^\circ =$$

$$\tan 90^\circ =$$

$$\csc \theta =$$

$$\sec \theta =$$

$$\cot \theta =$$

Trig Identities - basics

$$\sin^2 \theta + \cos^2 \theta =$$

$$\sin(\alpha + \beta) =$$

$$\cos(\alpha + \beta) =$$

Knowing these, you should be able to derive:

Laws of sine and cosine

$$\sin(90^\circ - \theta) = \cos \theta$$

$$\cos(90^\circ - \theta) = \sin \theta$$

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

$$\cos(2\theta) = \cos^2 \theta - \sin^2 \theta = 2 \cos^2 \theta - 1 = 1 - 2 \sin^2 \theta$$

$$\sin^2 \theta = (1 - \cos(2\theta))/2$$

$$\cos^2 \theta = (1 + \cos(2\theta))/2$$

QUADRATIC EQUATION

$ax^2 + bx + c = 0$, where $a \neq 0$.

Its solution is: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$