

# C12 - 6.6 - Double Angle HW

Simplify the following.

$$4 \sin 3x \cos 3x =$$

$$6 \sin \frac{x}{2} \cos \frac{x}{2} =$$

$$8 \sin\left(\frac{\pi}{4}\right) \cos \frac{\pi}{4} =$$

$$\cos^2 x - \sin^2 x =$$

$$\cos^2 \frac{1}{2}x - \sin^2 \frac{1}{2}x =$$

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

$$2 \cos^2 \frac{x}{4} - 1 =$$

$$1 - 2 \sin^2 \frac{x}{2} =$$

$$3 - 6 \sin^2 3x =$$

$$2 \cos^2 \frac{\pi}{2} - 1 =$$

$$\sec 10x (\sin^2 5x - \cos^2 5x) =$$

$$2 \sin 4x (\cos^2 2x - \sin^2 2x) =$$

# C12 - 6.6 - Double Angle HW

Simplify the following.

$$1 + \cos 2x =$$

$$1 - \cos 2x =$$

$$\cos 2x + 1 =$$

$$\cos 2x - 1 =$$

$$\frac{1 + \cos 2x}{\sin^2 x} =$$

$$\frac{1 - \cos 2x}{\tan^2 x} =$$

$$\frac{\cos 2x - 1}{\sin^2 x} =$$

$$\frac{\cos 2x - 1}{2\csc^2 x} =$$

## C12 - 6.6 - Solve Double Angle WS (See 4.5 Notes)

$$\sin x \cos x = 0$$

$$\sin 2x = 0$$

$$\sin 2x = 1$$

$$\cos 2x = 0$$

$$\cos 2x = -1$$

$$\cos 2x = 1$$

$$\sin 4x = 0$$

$$\cos 3x = -1$$

$$\cos\left(\frac{x}{2}\right) = 1$$

$$\sin\left(\frac{1}{3}x\right) = -1$$

## C12 - 6.6 - Solve Double Angle WS (See 4.5 Notes)

$$\sin 2x + \cos x = 0$$

$$\sin x + \cos 2x = 1$$

$$\sin x - \cos 2x = -1$$

$$\sin 2x = -\sin x$$

$$\sin^2 x + \cos 2x = 0$$

$$\cos^2 x - \cos 2x = 0$$

$$\cos^2 x - \cos 2x = 1$$

$$\sin x - \cos 2x = 0$$

$$\cos x + \cos 2x = 0$$

$$\cos x - \cos 2x = 0$$

$$3\sin x + \cos 2x = -1$$

$$3\cos x + \cos 2x = 1$$

## C12 - 6.6 - Solve Double Angle WS (See 4.5 Notes)

$$\sin 2x = \frac{1}{2}$$

$$\cos 2x = -\frac{1}{\sqrt{2}}$$

$$\cos\left(\frac{x}{2}\right) = \frac{1}{2}$$

$$\cos 3x = \frac{\sqrt{3}}{2}$$

$$\tan 2x = \sqrt{3}$$

$$\sin 4x = \frac{1}{\sqrt{2}}$$

$$\sin\left(\frac{1}{3}x\right) = \frac{\sqrt{3}}{2}$$

## C12 - 6.6 - Solve Double Angle WS (See 4.5 Notes)

$$2\cot x \sin^2 x = 1$$

$$2\tan x \cos^2 x = \frac{1}{2}$$

$$2\sin x \cos x + 1 = 0$$

$$4\cos^2 2x - \sqrt{3} = 0$$

$$\cos 2x = 2\sin^2 x$$

$$\sin^2 x - \cos^2 x = 0$$