

Double-Angle Identities

Power-Reducing Identities

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Half-Angle Identities

The sign in front of the radical will be determined by the quadrant in which $x/2$ is located.

Half-Angle Identities for Tangent

1

$$\sin \theta = -\frac{\sqrt{26}}{26} \text{ where } \frac{\pi}{2} \leq \theta < \pi$$

Find $\sin 2\theta$

$$\cos \theta = -\frac{3}{5} \text{ where } \frac{\pi}{2} \leq \theta < \pi$$

Find $\tan \frac{\theta}{2}$

$$\sin \theta = -\frac{15}{17} \text{ where } \frac{3\pi}{2} \leq \theta < 2\pi$$

Find $\cos 2\theta$

$$\sin \theta = \frac{12}{13} \text{ where } 0 \leq \theta < \frac{\pi}{2}$$

Find $\tan \frac{\theta}{2}$