

Accel Precalc Notes: Half Angle Formulas
Unit #7: Trig Identities and Equations
Lesson 5: Half-Angle Formulas

Name _____

EQ:

❖ Half-Angle Formulas (will not derive)

- $\sin \frac{\theta}{2} =$ _____
 - $\cos \frac{\theta}{2} =$ _____
 - $\tan \frac{\theta}{2} =$ _____
- *** Sign of _____ based on location of _____

Ex. Find the exact value of each using a *half-angle* formula.

1. $\sin 15^\circ$

2. $\cos 22.5^\circ$

Ex. Given $\sin \theta = \frac{5}{13}$ with $\frac{\pi}{2} < \theta < \pi$, find each of the following:

1. $\sin \frac{\theta}{2}$

2. $\cos \frac{\theta}{2}$

3. $\tan \frac{\theta}{2}$

Ex. Find the exact value of the given expression.

1. $\sin\left(2\sin^{-1}\left(\frac{1}{2}\right)\right)$ ***Treat this as a _____ angle problem.

2. $\sin^2\left(\frac{1}{2}\cos^{-1}\left(\frac{3}{5}\right)\right)$ ***Treat this as a _____ angle problem.

- Assignment: Practice Worksheet #1 Double and Half-Angles
Practice Worksheet #2 Sum, Difference, Double, and Half Angles