

Find the exact value of cosine, sine, and tangent of $\frac{1}{2}\theta$ and 2θ

1. $\sin \theta = \frac{3}{5}; \theta$ in Quadrant I

2. $\sin \theta = \frac{5}{13}; \theta$ in Quadrant II

3. $\tan \theta = -\frac{5}{12}; \theta$ in Quadrant IV

4. $\tan \theta = -\frac{3}{4}; \theta$ in Quadrant II

5. $\cos \theta = \frac{5}{9}; \theta$ in Quadrant I

6. $\cos \theta = -\frac{5}{13}; \theta$ in Quadrant III

State the following identities, then start memorizing them!!!!

Quotient Identities:

$\tan x =$

$\cot x =$

Reciprocal Identities:

$\sin x =$

$\cos x =$

$\csc x =$

$\sec x =$

$\cot x =$

$\tan x =$

Pythagorean Identities:

$$\sin^2 x + \underline{\hspace{2cm}} = 1 \qquad \underline{\hspace{2cm}} + 1 = \sec^2 x$$

$$1 + \underline{\hspace{2cm}} = \csc^2 x$$

Negative Angle Identities:

$$\sin(-x) = \qquad \cos(-x) = \qquad \tan(-x) =$$

Addition and Subtraction Identities:

$$\sin(x + y) = \qquad \tan(x + y) =$$

$$\sin(x - y) =$$

$$\cos(x + y) = \qquad \tan(x - y) =$$

$$\cos(x - y) =$$

Cofunction Identities:

$$\sin x = \qquad \cos x =$$

$$\tan x = \qquad \cot x =$$

$$\sec x = \qquad \csc x =$$

Double-Angle Identities:

$$\sin 2x = \qquad \cos 2x = \qquad \tan 2x =$$

Half-Angle Identities:

$$\sin\left(\frac{x}{2}\right) = \qquad \cos\left(\frac{x}{2}\right) = \qquad \tan\left(\frac{x}{2}\right) =$$