**Summary List of Trig Identities ...**

**The Fundamental Identities ...**
\[
\begin{align*}
csc \theta &= \frac{1}{\sin \theta} & \sec \theta &= \frac{1}{\cos \theta} \\
\tan \theta &= \frac{\sin \theta}{\cos \theta} & \cot \theta &= \frac{\cos \theta}{\sin \theta}
\end{align*}
\]

**The Pythagorean Identities ...**
\[
\begin{align*}
\sin^2 \theta + \cos^2 \theta &= 1 \\
\tan^2 \theta + 1 &= \sec^2 \theta \\
1 + \cot^2 \theta &= \csc^2 \theta
\end{align*}
\]

**The Even and Odd Identities ...**
\[
\begin{align*}
\sin(-x) &= -\sin(x) \\
\cos(-x) &= \cos(x) \\
\tan(-x) &= -\tan(x)
\end{align*}
\]

**The Sum and Difference Identities ...**
\[
\begin{align*}
\sin(\alpha \pm \beta) &= \sin \alpha \cos \beta \pm \cos \alpha \sin \beta \\
\cos(\alpha \pm \beta) &= \cos \alpha \cos \beta \mp \sin \alpha \sin \beta \\
\tan(\alpha \pm \beta) &= \frac{\tan \alpha \pm \tan \beta}{1 \mp \tan \alpha \tan \beta}
\end{align*}
\]

**The Double Angle Identities ...**
\[
\begin{align*}
\sin(2\theta) &= 2\sin \theta \cos \theta \\
\cos(2\theta) &= \cos^2 \theta - \sin^2 \theta \\
\cos(2\theta) &= 2\cos^2 \theta - 1 \\
\cos(2\theta) &= 1 - 2\sin^2 \theta \\
\tan(2\theta) &= \frac{2\tan \theta}{1 - \tan^2 \theta}
\end{align*}
\]