

**Formulas for Sums and Differences of Angles 2** – in book: Section 12.5 p. 766

Use the sum and difference identities and your unit circle to find the exact value of each function.

1.  $\sin 75^\circ$

2.  $\cos 15^\circ$

3.  $\cos 165^\circ$

4.  $\sin (-165^\circ)$

5.  $\csc 120^\circ$

6.  $\csc \frac{9\pi}{4}$

7.  $\sec -\frac{3\pi}{4}$

8.  $\cot -\frac{11\pi}{6}$

If A and B are the measures of two first quadrant angles, find the exact value of each function.

9. If  $\sin A = \frac{24}{25}$  and  $\cos B = \frac{4}{5}$ , find  $\cos (A + B)$ .

10. If  $\sin A = \frac{24}{25}$  and  $\cos B = \frac{3}{5}$ , find  $\sin (A - B)$ .

Verify that each of the following is an identity.

11.  $\tan x + \cot x = \sec x \csc x$

12.  $\frac{\sin \theta + \tan \theta}{\cot \theta + \csc \theta} = \sin \theta \tan \theta$

13.  $\cos (90^\circ + \theta) = -\sin \theta$

14.  $\sin (270^\circ - \theta) = -\cos \theta$