

## Sum and Difference Worksheet

Period \_\_\_\_\_

**Use the angle sum or difference identity to find the exact value of each.**

1)  $\sin 105^\circ$

2)  $\cos 195^\circ$

3)  $\tan 285^\circ$

4)  $\sin \frac{11\pi}{12}$

5)  $\cos \frac{7\pi}{12}$

**Prove each identity**

6)  $\sin\left(\frac{\pi}{2} - x\right) = \cos x$

7)  $\cos\left(x - \frac{\pi}{2}\right) = \sin x$

8)  $\cos\left(x - \frac{\pi}{4}\right) = \frac{\sqrt{2}}{2}(\sin x + \cos x)$

**Find the exact value.**

9) Find  $\cos(x + y)$  when  $\sin x = \frac{5}{13}$  and

$$\sin y = \frac{4}{5}.$$

10) Find  $\sin(x - y)$  when  $\cos x = \frac{8}{17}$  and

$$\cos y = \frac{3}{5}.$$