

**HW – Trig. Functions of Any Angle**

For 1-3, the given point is on the terminal side of an angle in standard position. Find the exact values of the six trigonometric functions of the angle  $\theta$ .

1. (7, 24)

$$\sin\theta = \underline{\hspace{2cm}} \quad \csc\theta = \underline{\hspace{2cm}}$$

$$\cos\theta = \underline{\hspace{2cm}} \quad \sec\theta = \underline{\hspace{2cm}}$$

$$\tan\theta = \underline{\hspace{2cm}} \quad \cot\theta = \underline{\hspace{2cm}}$$

2. (5, -12)

$$\sin\theta = \underline{\hspace{2cm}} \quad \csc\theta = \underline{\hspace{2cm}}$$

$$\cos\theta = \underline{\hspace{2cm}} \quad \sec\theta = \underline{\hspace{2cm}}$$

$$\tan\theta = \underline{\hspace{2cm}} \quad \cot\theta = \underline{\hspace{2cm}}$$

3. (-4, 10)

$$\sin\theta = \underline{\hspace{2cm}} \quad \csc\theta = \underline{\hspace{2cm}}$$

$$\cos\theta = \underline{\hspace{2cm}} \quad \sec\theta = \underline{\hspace{2cm}}$$

$$\tan\theta = \underline{\hspace{2cm}} \quad \cot\theta = \underline{\hspace{2cm}}$$

For 4-5, state the quadrant in which  $\theta$  lies.

4.  $\sin\theta < 0$  and  $\cos\theta < 0$

5.  $\cot\theta > 0$  and  $\cos\theta > 0$

**For 6-8, find the values of the six trigonometric functions of  $\theta$ .**

6. Function value:  $\tan \theta = -\frac{15}{8}$

Constraint:  $\sin \theta < 0$

$\sin \theta = \underline{\hspace{2cm}}$        $\csc \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$        $\sec \theta = \underline{\hspace{2cm}}$

$\tan \theta = \underline{\hspace{2cm}}$        $\cot \theta = \underline{\hspace{2cm}}$

7. Function value:  $\sec \theta = -2$

Constraint:  $0 \leq \theta \leq \pi$

$\sin \theta = \underline{\hspace{2cm}}$        $\csc \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$        $\sec \theta = \underline{\hspace{2cm}}$

$\tan \theta = \underline{\hspace{2cm}}$        $\cot \theta = \underline{\hspace{2cm}}$

8. Function value:  $\cot \theta$  is undefined

Constraint:  $\frac{\pi}{2} \leq \theta \leq \frac{3\pi}{2}$

$\sin \theta = \underline{\hspace{2cm}}$        $\csc \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$        $\sec \theta = \underline{\hspace{2cm}}$

$\tan \theta = \underline{\hspace{2cm}}$        $\cot \theta = \underline{\hspace{2cm}}$

**For 9-12, use a calculator to evaluate the trigonometric function. Round answers to three decimal places.**

9.  $\cos\left(-\frac{15\pi}{14}\right)$

10.  $\csc(0.33)$

11.  $\cot(-220^\circ)$

12.  $\sec(-280^\circ)$