

### Section 4.3A

The given point lies on the terminal side of an angle  $\theta$  in standard position. Find the values of the six trigonometric functions of  $\theta$ . (Example 1)

- (3, 4)
- (-6, 6)
- (-4, -3)
- (2, 0)
- (1, -8)
- (5, -3)
- (-8, 15)
- (-1, -2)

Find the exact value of each trigonometric function, if defined. If not defined, write *undefined*. (Example 2)

- $\sin \frac{\pi}{2}$
- $\tan 2\pi$
- $\cot(-180^\circ)$
- $\csc 270^\circ$
- $\cos(-270^\circ)$
- $\sec 180^\circ$
- $\tan \pi$
- $\sec\left(-\frac{\pi}{2}\right)$

Sketch each angle. Then find its reference angle. (Example 3)

- $135^\circ$
- $210^\circ$
- $\frac{7\pi}{12}$
- $\frac{11\pi}{3}$
- $-405^\circ$
- $-75^\circ$
- $\frac{5\pi}{6}$
- $\frac{13\pi}{6}$

Find the exact values of the five remaining trigonometric functions of  $\theta$ . (Example 5)

- $\tan \theta = 2$ , where  $\sin \theta > 0$  and  $\cos \theta > 0$
- $\csc \theta = 2$ , where  $\sin \theta > 0$  and  $\cos \theta < 0$
- $\sin \theta = -\frac{1}{5}$ , where  $\cos \theta > 0$
- $\cos \theta = -\frac{12}{13}$ , where  $\sin \theta < 0$
- $\sec \theta = \sqrt{3}$ , where  $\sin \theta < 0$  and  $\cos \theta > 0$
- $\cot \theta = 1$ , where  $\sin \theta < 0$  and  $\cos \theta < 0$
- $\tan \theta = -1$ , where  $\sin \theta < 0$
- $\cos \theta = -\frac{1}{2}$ , where  $\sin \theta > 0$