

Given a point on the terminal side of an angle  $\theta$ , find the exact value of each of the six trig functions of  $\theta$ .

$$1. (-3, 4) \quad \begin{aligned} \sin\theta &= \frac{4}{5} & \csc\theta &= \frac{5}{4} \\ \cos\theta &= -\frac{3}{5} & \sec\theta &= -\frac{5}{3} \\ \tan\theta &= -\frac{4}{3} & \cot\theta &= -\frac{3}{4} \end{aligned}$$

$$2. (2, -3) \quad \begin{aligned} \sin\theta &= -\frac{3}{\sqrt{13}} & \csc\theta &= -\frac{\sqrt{13}}{3} \\ \cos\theta &= \frac{2}{\sqrt{13}} & \sec\theta &= \frac{\sqrt{13}}{2} \\ \tan\theta &= -\frac{3}{2} & \cot\theta &= -\frac{2}{3} \end{aligned}$$

$$3. (2, 2) \quad \begin{aligned} \sin\theta &= \frac{2}{\sqrt{8}} = \frac{1}{\sqrt{2}} & \csc\theta &= \frac{\sqrt{8}}{2} = \sqrt{2} \\ \cos\theta &= \frac{2}{\sqrt{8}} = \frac{1}{\sqrt{2}} & \sec\theta &= \frac{\sqrt{8}}{2} = \sqrt{2} \\ \tan\theta &= 1 & \cot\theta &= 1 \end{aligned}$$

Find the exact value of each of the remaining trig functions of  $\theta$ .

$$4. \sin\theta = \frac{12}{13}, 90^\circ < \theta < 180^\circ \quad \begin{aligned} \csc\theta &= \frac{13}{12} \\ \cos\theta &= -\frac{5}{13} & \sec\theta &= -\frac{13}{5} \\ \tan\theta &= -\frac{12}{5} & \cot\theta &= -\frac{5}{12} \end{aligned}$$

$$5. \cos\theta = \frac{-4}{5}, \pi < \theta < 3\pi/2 \quad \begin{aligned} \sin\theta &= -\frac{3}{5} & \csc\theta &= -\frac{5}{3} \\ \tan\theta &= \frac{3}{4} & \sec\theta &= -\frac{5}{4} \\ & & \cot\theta &= \frac{4}{3} \end{aligned}$$

$$6. \sec\theta = 2, \sin\theta < 0 \quad \begin{aligned} \sin\theta &= -\frac{\sqrt{3}}{2} & \csc\theta &= -\frac{2}{\sqrt{3}} \\ \cos\theta &= \frac{1}{2} & \cot\theta &= -\frac{1}{\sqrt{3}} \\ \tan\theta &= -\sqrt{3} \end{aligned}$$