

I. Do as indicated

1. Determine the quadrant containing $P(\theta)$ if,

(a) $\theta = \frac{19\pi}{9}$

(b) $\theta = \frac{-17\pi}{5}$

(c) $\theta = -10$

(d) $\theta = 7$

(e) $\cos \theta > 0$ and $\tan \theta < 0$

(f) $\sin \theta < 0$ and $\cot \theta > 0$

(g) $\cot \theta > 0$ and $\sec \theta < 0$

(h) $\tan \theta > 0$ and $\csc \theta < 0$

2. Evaluate the following:

(a) $\sin \frac{2\pi}{3} + \cos \frac{7\pi}{6} + \tan \frac{5\pi}{3}$

(b) $\tan \frac{5\pi}{4} + \cot \frac{7\pi}{4} - \sec \frac{5\pi}{6}$

(c) $\cos(\frac{11\pi}{6}) \tan(\frac{2\pi}{3}) \csc(-\frac{7\pi}{4})$

(d) $\sin(315^\circ) \tan(210^\circ) \sec(120^\circ)$

(e) $\sin(135^\circ) \cos(-\frac{\pi}{4}) \tan(585^\circ)$

(f) $\csc(-\frac{11\pi}{4}) \cot(-\frac{31\pi}{6})$

(g) $\tan(540^\circ) \cot(540^\circ)$

(h) $\sin(-225^\circ) \cot(330^\circ) [\sec(-\frac{5\pi}{4})]^{-1}$

(i) $\frac{\sin \frac{5\pi}{6}}{1 + \cos \frac{5\pi}{6}}$

3. Find the exact values of the other five trigonometric functions of θ .

(a) $\sin \theta = \frac{5}{13}$ and $\cos \theta > 0$

(b) $\tan \theta = \frac{15}{8}$ and $\sec \theta < 0$

(c) $\sec \theta = \sqrt{2}$ and $\cot \theta < 0$

(d) $\csc \theta = -\frac{1}{2}$ and $\sec \theta > 0$

4. If θ is an angle in standard position, and point P is on the terminal side of θ , find the six trigonometric functions of θ .

(a) $P(3, 4)$

(b) $P(-5, 12)$

(c) $P(0, -4)$

(d) $P(2\sqrt{3}, -2)$

(e) $P(1, 1)$

(f) $P(-8, -15)$

II. Solve for the following.

1. Evaluate: $\sin(37.5^\circ) \cos(-37.5^\circ) \tan(-37.5^\circ) \sec(37.5^\circ) \csc(37.5^\circ) \cot(-37.5^\circ)$

2. If the minute hand of a clock has length 6 inches, how far does its tip travel in 1 hour and 20 minutes?

3. A pulley having diameter 20 cm is turned by a belt that moves at a rate of 3m/s. How many revolutions does the pulley make per minute?