

1. Use the unit circle to find the value of the trigonometric function at the given real number.

(a) $\cos\left(\frac{4\pi}{3}\right)$ (b) $\tan(\pi)$ (c) $\cos\left(\frac{5\pi}{3}\right)$ (d) $\cos\left(\frac{\pi}{3}\right)$

(e) $\cos\left(\frac{7\pi}{6}\right)$ (f) $\cos\left(\frac{3\pi}{4}\right)$ (g) $\sin\left(\frac{2\pi}{3}\right)$ (h) $\sin\left(\frac{\pi}{4}\right)$

(i) $\tan\left(\frac{\pi}{6}\right)$ (j) $\sin\left(\frac{7\pi}{4}\right)$ (k) $\cos(0)$ (l) $\sin\left(\frac{\pi}{2}\right)$

2. Use the unit circle to find the value of the trigonometric function at the given real number.

(a) $\csc\left(\frac{2\pi}{3}\right)$ (b) $\sec\left(\frac{5\pi}{3}\right)$ (c) $\cot\left(\frac{4\pi}{3}\right)$ (d) $\sec\left(\frac{\pi}{3}\right)$

(e) $\csc\left(\frac{\pi}{2}\right)$ (f) $\csc\left(\frac{\pi}{4}\right)$ (g) $\csc\left(\frac{5\pi}{6}\right)$ (h) $\cot\left(\frac{\pi}{2}\right)$

(i) $\csc\left(\frac{3\pi}{4}\right)$ (j) $\sec\left(\frac{4\pi}{3}\right)$ (k) $\csc\left(\frac{4\pi}{3}\right)$ (l) $\sec\left(\frac{2\pi}{3}\right)$

(m) $\csc\left(\frac{3\pi}{2}\right)$ (n) $\cot\left(\frac{7\pi}{6}\right)$ (o) $\csc\left(\frac{5\pi}{4}\right)$ (p) $\cot\left(\frac{2\pi}{3}\right)$

3. Use the unit circle to find the value of the trigonometric function at the given real number.

(a) $\tan\left(\frac{10\pi}{3}\right)$ (b) $\cos\left(-\frac{\pi}{3}\right)$ (c) $\sin\left(-\frac{\pi}{4}\right)$ (d) $\sec(6\pi)$

(e) $\sin\left(\frac{19\pi}{6}\right)$ (f) $\sin\left(\frac{7\pi}{2}\right)$ (g) $\cot\left(-\frac{5\pi}{6}\right)$ (h) $\tan\left(\frac{19\pi}{6}\right)$

(i) $\sec\left(-\frac{\pi}{6}\right)$ (j) $\sec\left(\frac{17\pi}{6}\right)$ (k) $\tan\left(-\frac{7\pi}{6}\right)$ (l) $\csc\left(-\frac{2\pi}{3}\right)$

(m) $\sec\left(-\frac{5\pi}{3}\right)$ (n) $\sin(13\pi)$ (o) $\cos(-5\pi)$ (p) $\cot\left(\frac{25\pi}{2}\right)$

Answers

1. (a) $-\frac{1}{2}$ (b) 0 (c) $\frac{1}{2}$ (d) $\frac{1}{2}$
- (e) $-\frac{\sqrt{3}}{2}$ (f) $-\frac{\sqrt{2}}{2}$ (g) $\frac{\sqrt{3}}{2}$ (h) $\frac{\sqrt{2}}{2}$
- (i) $\frac{\sqrt{3}}{3}$ (j) $-\frac{\sqrt{2}}{2}$ (k) 1 (l) 1
2. (a) $\frac{2\sqrt{3}}{3}$ (b) 2 (c) $\frac{\sqrt{3}}{3}$ (d) 2
- (e) 1 (f) $\sqrt{2}$ (g) 2 (h) 0
- (i) $\sqrt{2}$ (j) -2 (k) $-\frac{2\sqrt{3}}{3}$ (l) -2
- (m) -1 (n) $\sqrt{3}$ (o) $-\sqrt{2}$ (p) $-\frac{\sqrt{3}}{3}$
3. (a) $\sqrt{3}$ (b) $\frac{1}{2}$ (c) $-\frac{\sqrt{2}}{2}$ (d) 1
- (e) $-\frac{1}{2}$ (f) -1 (g) $\sqrt{3}$ (h) $\frac{\sqrt{3}}{3}$
- (i) $\frac{2\sqrt{3}}{3}$ (j) $-\frac{2\sqrt{3}}{3}$ (k) $-\frac{\sqrt{3}}{3}$ (l) $-\frac{2\sqrt{3}}{3}$
- (m) 2 (n) 0 (o) -1 (p) 0