

Find the corresponding reference angle.

1. $114^\circ$	2. $285^\circ$	3. $17^\circ$	4. $243^\circ$
5. $34^\circ$	6. $274^\circ$	7. $100^\circ$	8. $226^\circ$
9. $132^\circ$	10. $337^\circ$	11. $78^\circ$	12. $268^\circ$
13. $306^\circ$	14. $52^\circ$	15. $197^\circ$	16. $176^\circ$

Find the exact value for each trigonometric function.

1. $\sin 60^\circ$	2. $\tan 30^\circ$	3. $\cos 0^\circ$
4. $\sin 0^\circ$	5. $\cos 45^\circ$	6. $\sin 90^\circ$
7. $\cos 675^\circ$	8. $\csc (-240^\circ)$	9. $\cot 900^\circ$
10. $\tan 570^\circ$	11. $\sec (-780^\circ)$	12. $\csc 90^\circ$
13. $\sin 420^\circ$	14. $\tan (-480^\circ)$	15. $\cos 150^\circ$
16. $\sec 450^\circ$	17. $\cot (-360^\circ)$	18. $\sin (-330^\circ)$
19. $\tan (-855^\circ)$	20. $\cos (-600^\circ)$	21. $\csc 810^\circ$
22. $\cot 240^\circ$	23. $\sec 930^\circ$	24. $\cot (-60^\circ)$

Find the exact value for each trigonometric function.

1. $\tan \frac{\pi}{3}$	2. $\cos \frac{\pi}{4}$	3. $\sin \frac{\pi}{6}$
4. $\cos \frac{\pi}{2}$	5. $\tan \frac{\pi}{4}$	6. $\sin \frac{\pi}{3}$
7. $\cot \frac{\pi}{2}$	8. $\csc \frac{7\pi}{3}$	9. $\sec \frac{3\pi}{4}$
10. $\tan \frac{-9\pi}{2}$	11. $\cot \frac{23\pi}{6}$	12. $\sec \frac{-10\pi}{3}$
13. $\sin \frac{-23\pi}{6}$	14. $\csc \frac{-\pi}{4}$	15. $\cos \frac{13\pi}{3}$
16. $\cot -\pi$	17. $\cos \frac{-7\pi}{4}$	18. $\sec \frac{-5\pi}{2}$
19. $\sin \frac{5\pi}{3}$	20. $\csc \frac{10\pi}{3}$	21. $\tan \frac{21\pi}{4}$

Given a point on the terminal side of  $\theta$  in standard position, find the exact value of the six trigonometric functions of  $\theta$ .

1. $P(8, 2)$	$\cot \theta =$	$\sec \theta =$	$\sin \theta =$	$\csc \theta =$	$\tan \theta =$	$\cos \theta =$
2. $P(-5, -1)$	$\csc \theta =$	$\cot \theta =$	$\sec \theta =$	$\cos \theta =$	$\tan \theta =$	$\sin \theta =$
3. $P(3, -8)$	$\tan \theta =$	$\sec \theta =$	$\csc \theta =$	$\sin \theta =$	$\cot \theta =$	$\cos \theta =$
4. $P(9, -9)$	$\cot \theta =$	$\cos \theta =$	$\tan \theta =$	$\sin \theta =$	$\sec \theta =$	$\csc \theta =$

Given the quadrant and one trigonometric function value of  $\theta$  in standard position, find the exact value of the trigonometric function.

1. Quadrant I $\tan \theta = 2$	$\csc \theta =$	2. Quadrant III $\tan \theta = 4$	$\sin \theta =$
3. Quadrant IV $\cot \theta = -6$	$\cos \theta =$	4. Quadrant I $\cot \theta = 8$	$\sec \theta =$
5. Quadrant III $\tan \theta = 5$	$\csc \theta =$	6. Quadrant II $\cot \theta = -3$	$\sin \theta =$
7. Quadrant III $\cot \theta = 2$	$\tan \theta =$	8. Quadrant II $\tan \theta = -2$	$\cot \theta =$
9. Quadrant III $\tan \theta = 2$	$\sec \theta =$	10. Quadrant IV $\cot \theta = -3$	$\sec \theta =$
11. Quadrant III $\cot \theta = 1$	$\cos \theta =$	12. Quadrant I $\cot \theta = 1$	$\sec \theta =$
13. Quadrant II $\tan \theta = -2$	$\csc \theta =$	14. Quadrant IV $\cot \theta = -2$	$\sec \theta =$

Two trig functions are given. Find the exact value of the function requested.

1.  $\cos \theta = \frac{8}{17}$ ,  $\sin \theta > 0$ , find  $\tan \theta$ .

2.  $\sin \theta = \frac{-40}{40}$ ,  $\cos \theta < 0$ , find  $\cot \theta$ .

3.  $\tan \theta = \frac{-3}{4}$ ,  $\cos \theta < 0$ , find  $\sin \theta$ .

4.  $\sin \theta = \frac{-5}{13}$ ,  $\cos \theta > 0$ , find  $\tan \theta$ .