

Find the angle measure θ , such that $0 \leq \theta < 2\pi$, that corresponds to the measure given.

1. $\frac{7\pi}{2} =$

2. $\frac{11\pi}{3} =$

3. $\frac{17\pi}{4} =$

4. $\frac{29\pi}{6} =$

5. $\frac{-\pi}{2} =$

6. $\frac{-4\pi}{3} =$

7. $\frac{-9\pi}{4} =$

8. $\frac{-17\pi}{6} =$

Find the values of the indicated trigonometric functions at the given angle.

Answers must be *exact*. (i.e. radical form)

9. $\sin \frac{3\pi}{2} =$

10. $\sin \frac{2\pi}{3} =$

11. $\sin \frac{7\pi}{4} =$

12. $\sin \frac{5\pi}{6} =$

13. $\sin \frac{-\pi}{2} =$

14. $\sin \frac{15\pi}{3} =$

15. $\sin \frac{5\pi}{4} =$

16. $\sin \frac{-13\pi}{6} =$

17. $\cos \pi =$

18. $\cos \frac{5\pi}{3} =$

19. $\cos \frac{7\pi}{4} =$

20. $\cos \frac{\pi}{6} =$

21. $\cos \frac{-\pi}{2} =$

22. $\cos \frac{-7\pi}{3} =$

23. $\cos \frac{13\pi}{4} =$

24. $\cos \frac{21\pi}{6} =$

25. $\tan \pi =$

26. $\tan \frac{\pi}{3} =$

27. $\tan \frac{3\pi}{4} =$

28. $\tan \frac{5\pi}{6} =$

29. $\tan \frac{-\pi}{2} =$

30. $\tan \frac{8\pi}{3} =$

31. $\tan \frac{-14\pi}{4} =$

32. $\tan \frac{19\pi}{6} =$

33. $\cot \frac{\pi}{2} =$

34. $\cot \frac{2\pi}{3} =$

35. $\cot \frac{-3\pi}{4} =$

36. $\cot \frac{13\pi}{6} =$

37. $\csc \frac{\pi}{2} =$

38. $\csc \frac{5\pi}{3} =$

39. $\csc \frac{7\pi}{4} =$

40. $\csc \frac{\pi}{6} =$

41. $\sec \frac{-3\pi}{2} =$

42. $\sec \frac{\pi}{3} =$

43. $\sec \frac{11\pi}{4} =$

44. $\sec \frac{-5\pi}{6} =$

45. $\tan 7\pi =$

46. $\sec \frac{-9\pi}{2} =$

47. $\csc \frac{21\pi}{2} =$

48. $\cot \frac{-19\pi}{2} =$