

Find the exact value for each. Use π radian measure.

1. $\sin^{-1} 0$

2. $\cos^{-1} 1$

3. $\sin^{-1}(-1)$

4. $\cos^{-1}(-1)$

5. $\tan^{-1} 0$

6. $\tan^{-1}(-1)$

7. $\sin^{-1} \frac{\sqrt{2}}{2}$

8. $\tan^{-1} \frac{\sqrt{3}}{3}$

9. $\tan^{-1} \sqrt{3}$

10. $\sin^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

11. $\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

12. $\sin^{-1}\left(-\frac{\sqrt{2}}{2}\right)$

13. $\cot^{-1} \sqrt{3}$

14. $\cot^{-1} 1$

15. $\csc^{-1}(-1)$

16. $\csc^{-1} \sqrt{2}$

17. $\sec^{-1} \frac{2\sqrt{3}}{3}$

18. $\sec^{-1}(-2)$

19. $\cot^{-1}\left(-\frac{\sqrt{3}}{3}\right)$

20. $\csc^{-1}\left(-\frac{2\sqrt{3}}{3}\right)$

In Problems 21–44, use a calculator to find the value of each expression rounded to two decimal places.

21. $\sin^{-1} 0.1$

22. $\cos^{-1} 0.6$

23. $\tan^{-1} 5$

24. $\tan^{-1} 0.2$

25. $\cos^{-1} \frac{7}{8}$

26. $\sin^{-1} \frac{1}{8}$

27. $\tan^{-1}(-0.4)$

28. $\tan^{-1}(-3)$

29. $\sin^{-1}(-0.12)$

30. $\cos^{-1}(-0.44)$

31. $\cos^{-1} \frac{\sqrt{2}}{3}$

32. $\sin^{-1} \frac{\sqrt{3}}{5}$

33. $\sec^{-1} 4$

34. $\csc^{-1} 5$

35. $\cot^{-1} 2$

36. $\sec^{-1}(-3)$

37. $\csc^{-1}(-3)$

38. $\cot^{-1}\left(-\frac{1}{2}\right)$

39. $\cot^{-1}(-\sqrt{5})$

40. $\cot^{-1}(-8.1)$

41. $\csc^{-1}\left(-\frac{3}{2}\right)$

42. $\sec^{-1}\left(-\frac{4}{3}\right)$

43. $\cot^{-1}\left(-\frac{3}{2}\right)$

44. $\cot^{-1}(-\sqrt{10})$