

For problems 1 – 18, find the EXCAT value of the inverse trig function without using a calculator. The answer should be in radians.

1. $\arcsin(\frac{1}{2})$

2. $\cos^{-1}(0)$

3. $\arctan(1)$

4. $\sin^{-1}(-\frac{\sqrt{3}}{2})$

5. $\arccos(-1)$

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

7. $\arcsin(\frac{\sqrt{3}}{2})$

8. $\arccos(1)$

9. $\arctan(-\sqrt{3})$

10. $\arcsin(-\frac{1}{2})$

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

12. $\arctan(\sqrt{3})$

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

14. $\operatorname{arccsc}(\sqrt{2})$

15. $\operatorname{arccot}(-1)$

16. $\operatorname{arcsec}(-\sqrt{2})$

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

18. $\sec^{-1}(\frac{2}{\sqrt{3}})$

For problems 19-26, use the inverse properties of trig functions.

19. $\arcsin(\sin \frac{\pi}{3})$

20. $\cos(\arccos \frac{1}{2})$

21. $\arctan(\tan \frac{\pi}{4})$

22. $\arcsin(\sin \frac{5\pi}{6})$

23. $\cos(\arccos \frac{-\sqrt{3}}{2})$

24. $\tan(\arctan(-1))$

25. $\arccos(\cos \frac{3\pi}{2})$

26. $\sin(\arcsin(-\frac{\pi}{4}))$

For problems 27-38, find the exact value of the composition, leaving answers in radians if applicable. (HINT: Draw a triangle if not a unit circle angle)

27. $\tan(\cos^{-1} 4/5)$

28. $\sin(\arctan 5/12)$

29. $\cos(\arcsin -8/17)$

30. $\cot(\csc^{-1} -13/12)$

31. $\sec(\arccos 2/3)$

32. $\sin(\cot^{-1} 4)$

33. $\tan(\sin^{-1} -\frac{\sqrt{2}}{2})$

34. $\arcsin(\cos \frac{\pi}{3})$

35. $\tan(\arcsin 1)$

36. $\sec(\arccos \frac{1}{2})$

37. $\arccos(\sin \frac{7\pi}{6})$

38. $\sin^{-1}(\cos \frac{-7\pi}{3})$