

I. Describe the transformations.

1. $y = -2 \arcsin \frac{1}{8}(x - 12.7) - 1$

4. $y = \frac{8}{11} \arccos 5(x + 3.2) + 9\pi$

2. $y = 7 \arctan(-3x + 8.1) + 7\pi$

5. $y = -3 \arctan(2x + \pi) + 2$

3. $y = 7 \arccos \frac{1}{3}(x + \pi) - \frac{2}{7}\pi$

6. $y = \frac{1}{4} \arcsin(-x + 6)$

II. Evaluate each inverse expression for principal values only and write your final answer as an exact value. If no solution exists put "DNE".

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

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

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

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

12. $\tan^{-1}(0)$

17. $\arccos\left(-\frac{1}{2}\right)$

9. $\arcsin \frac{1}{2}$

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

18. $\arcsin\left(-\frac{\sqrt{2}}{2}\right)$

10. $\arctan \frac{\sqrt{3}}{3}$

14. $\sin^{-1}(0)$

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

III. Evaluate each composition for principal values only and write your final answer as an exact value. If no solution exists put "DNE".

19. $\tan\left(\cos^{-1}\left(\frac{8}{11}\right)\right)$

24. $\sin^{-1}\left(\cos\left(\frac{5\pi}{6}\right)\right)$

29. $\tan\left(\cos^{-1} \frac{1}{x}\right)$

20. $\sin^{-1}\left(\sin\left(\frac{4\pi}{3}\right)\right)$

25. $\tan(\cos^{-1} x)$

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

21. $\tan\left(\cos^{-1}\left(\frac{1}{2}\right)\right)$

26. $\cos\left(\sin^{-1}\left(\frac{1}{x}\right)\right)$

31. $\tan\left(\sin^{-1} \frac{x}{\sqrt{x^2 + 4}}\right)$

22. $\cos^{-1}\left(\sin\left(\frac{2\pi}{3}\right)\right)$

27. $\tan\left(\sin^{-1}\left(\frac{3}{5}\right)\right)$

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

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