

State the domain and range of each inverse function in interval notation.

1. $y = \tan^{-1}(x)$

2. $y = \sin^{-1}(x + 2)$

3. $y = \arccos(2x + 4)$

4. $y = \arctan(3x)$

Evaluate.

5. $\sin(\arcsin 0.7)$

6. $\cos[\arccos(-0.3)]$

7. $\arcsin(\sin 3\pi)$

8. $\arctan\left(\tan \frac{11\pi}{6}\right)$

Identify the inverse of the following functions.

9. $y = \arcsin(x)$

10. $y = \arctan(x + 1)$

11. $y = \arccos(x - 1)$

12. $y = \arcsin(3x)$

Evaluate.

13. $\sin\left(\arctan \frac{4}{3}\right)$

14. $\cos\left(\arcsin \frac{24}{25}\right)$

15. $\sec\left[\arctan\left(-\frac{3}{5}\right)\right]$

16. $\sin\left[\arccos\left(-\frac{2}{3}\right)\right]$

17. $\cot(\arctan x)$

18. $\sin(\arccos x)$

19. $\tan\left(\arccos \frac{x}{5}\right)$

20. $\csc\left(\arctan \frac{x}{\sqrt{7}}\right)$

Find the exact value.

21. $\sin 5\pi$

22. $\cos \frac{8\pi}{3}$

23. $\cos(-3\pi)$

24. $\sin\left(-\frac{9\pi}{4}\right)$

25. $\tan \frac{15\pi}{6}$

26. $\tan(-12\pi)$

Find one positive and one negative co-terminal angle.

27. $-\frac{11\pi}{6}$

28. $\frac{7\pi}{8}$

29. $\frac{8\pi}{35}$

30. $-\frac{2\pi}{15}$

Determine the quadrant in which θ lies.

31. $\sin\theta < 0$ and $\cos\theta < 0$

32. $\sin\theta > 0$ and $\tan\theta < 0$

33. $\sec\theta > 0$ and $\cot\theta < 0$

34. $\cot\theta > 0$ and $\cos\theta > 0$

Find the reference angle for θ .

35. $\theta = \frac{11\pi}{3}$

36. $\theta = \frac{17\pi}{6}$

37. $\theta = -\frac{\pi}{6}$

38. $\theta = \frac{11\pi}{4}$

Find the exact value.

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

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

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

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

Answers to Units 1 and 2 SLO Review

1. D: $(-\infty, \infty)$ R: $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$

2. D: $[-3, -1]$ R: $\left[-\frac{\pi}{2}, \frac{\pi}{2}\right]$

3. D: $[-2.5, -1.5]$ R: $[0, \pi]$

4. D: $(-\infty, \infty)$ R: $\left(-\frac{\pi}{2}, \frac{\pi}{2}\right)$

5. 0.7

6. -0.3

7. 0

8. $-\frac{\pi}{3}$

9. $y = \sin x$

10. $y = \tan(x) - 1$

11. $y = \cos(x) + 1$

12. $y = \frac{1}{3} \sin x$

13. $\frac{4}{5}$

14. $\frac{7}{25}$

15. $\frac{\sqrt{34}}{5}$

16. $\frac{\sqrt{5}}{3}$

17. $\frac{1}{x}$

18. $\sqrt{1-x^2}$

19. $\frac{\sqrt{25-x^2}}{x}$

20. $\frac{\sqrt{x^2+7}}{x}$

21. $\sin \pi = 0$

22. $\cos \frac{2\pi}{3} = -\frac{1}{2}$

23. $\cos(-\pi) = -1$

24. $\sin \frac{7\pi}{4} = -\frac{\sqrt{2}}{2}$

25. $\tan \frac{\pi}{2} = \text{undefined}$

26. $\tan 0 = 0$

27. $\frac{\pi}{6}, -\frac{23\pi}{6}$

28. $\frac{23\pi}{8}, -\frac{9\pi}{8}$

29. $\frac{78\pi}{35}, -\frac{62\pi}{35}$

30. $\frac{28\pi}{15}, -\frac{32\pi}{15}$

31. Quadrant III

32. Quadrant II

33. Quadrant IV

34. Quadrant I

$$35. \frac{\pi}{3}$$

$$36. \frac{\pi}{6}$$

$$37. \frac{\pi}{6}$$

$$38. \frac{\pi}{4}$$

$$39. \frac{\pi}{6}$$

$$40. \frac{2\pi}{3}$$

$$41. \frac{\pi}{6}$$

$$42. -\frac{\pi}{3}$$