



$$\sin \alpha = y$$

$$\cos \alpha = x$$

$$\tan \alpha = \frac{y}{x}$$

$$\pi \Leftrightarrow 180^\circ$$

$$\frac{\pi}{2} \Leftrightarrow 90^\circ$$

$$\frac{\pi}{6} \Leftrightarrow 30^\circ$$

$$\frac{\pi}{3} \Leftrightarrow 60^\circ$$

$$\frac{\pi}{4} \Leftrightarrow 45^\circ$$

Find the exact value: No calculators

1. $\sin \frac{\pi}{3} =$ _____

2. $\tan \frac{5\pi}{4} =$ _____

3. $\cos \frac{-4\pi}{3} =$ _____

4. $\cot \frac{-3\pi}{2} =$ _____

5. $\sec \frac{3\pi}{4} =$ _____

6. $\csc \frac{11\pi}{6} =$ _____

7. $\sin \frac{\pi}{2} =$ _____

8. $\tan \frac{-\pi}{2} =$ _____

9. $\sec \frac{3\pi}{2} =$ _____

10. $\cot \pi =$ _____

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

12. $\cos 2\pi =$ _____

Find all the solutions for α on the interval $[0, 2\pi)$:

13. $\sin \alpha = \frac{\sqrt{3}}{2}$

14. $\cos \alpha = \frac{-1}{2}$

15. $\sec \alpha = -\sqrt{2}$

16. $\tan \alpha = \frac{-\sqrt{3}}{3}$

17. $\csc \alpha = -2$

18. $\tan \alpha = 0$

19. $\tan \alpha = -1$

20. $\cos \alpha = \frac{-\sqrt{2}}{2}$

21. $\cot \alpha = \sqrt{3}$

22. $\cos \alpha = -1$

23. $\tan \alpha$ is undefined

24. $\sin \alpha = 1$

Find the exact value : No calculators.

25. $\arcsin \frac{-1}{2}$

26. $\arccos \frac{-1}{2}$

27. $\arcsin \frac{-\sqrt{3}}{2}$

28. $\arctan -\sqrt{3}$

29. $\operatorname{arccot} -\sqrt{3}$

30. $\arccos -1$

31. $\operatorname{arcsec} \sqrt{2}$

32. $\operatorname{arccot} -1$

33. $\arccos \frac{\sqrt{3}}{2}$

34. $\sin(\arctan -\sqrt{3})$

35. $\cos(\arctan -1)$

36. $\operatorname{arccot}(\tan \frac{\pi}{3})$

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

38. $\cos\left(\arctan \frac{-5}{12}\right)$

39. $\tan\left(\arcsin \frac{5}{13}\right)$

40. $\tan\left(\arccos \frac{-3}{5}\right)$

Find all the solutions for x in the real numbers:

41. $\sin x = \frac{\sqrt{3}}{2}$

42. $\cos x = \frac{-\sqrt{3}}{2}$

43. $\tan x = \frac{-\sqrt{3}}{3}$

44. $\sec x = -\sqrt{2}$

45. $\cot x = -1$

46. $\csc x = -2$

47. $\sin x = 0$

48. $\sin x = -1$

49. $\cos x = -1$

50. $\tan x = -\sqrt{3}$

51. $\sec x = -2$

52. $\sin x = \frac{-\sqrt{2}}{2}$

Find all the solutions for x on the interval $[0, 2\pi)$:

53. $\sin 2x = \frac{\sqrt{3}}{2}$

54. $\cos 2x = \frac{-1}{2}$

55. $\sec 3x = -\sqrt{2}$

$$56. \tan 2x = \frac{-\sqrt{3}}{3}$$

$$57. \cos 3x = -1$$

$$58. \sin 2x = \frac{-\sqrt{2}}{2}$$

$$59. \tan \frac{x}{2} = -1$$

$$60. \cos \frac{x}{2} = \frac{-\sqrt{2}}{2}$$

$$61. \cot \frac{x}{3} = \sqrt{3}$$

$$62. \cos \frac{x}{2} = -1$$

$$63. \tan \frac{x}{2} = -\sqrt{3}$$

$$64. \sin \frac{x}{3} = 1$$

$$65. \cos 3x = 0$$

$$66. \tan \frac{x}{3} = 0$$

$$67. \sin 3\alpha = 1$$

Find all the solutions for x on the interval $[0, 2\pi)$:

68. $2 \tan^2 x \sin x - \tan^2 x = 0$

69. $2 \sin^2 x + \sin x = 1$

70. $2 \cos^2 x + 5 \cos x + 2 = 0$

71. $4 \sin^2 x - 1 = 0$

72. $\sin^2 x - 3 \sin x + 2 = 0$

73. $\cot^2 x + \sqrt{3} \cot x = 0$

74. $\tan^2 x - 3 = 0$

75. $3 \sec^2 x - 4 = 0$

76. $\csc^2 x - 1 = 0$

Chapters 4 and 5 Final Review

There will also be questions from Chapter 4 - **Graphs of the Trigonometric Functions** and Chapter 5 - **Trigonometric Identities**. Questions on the final from these chapters will be matching or multiple choice. Review the areas in Chapter 4 and 5 that have matching questions as part of your review for the final.

6-7: Trig Review Answers

1. $\frac{\sqrt{3}}{2}$ 2. 1 3. $\frac{-1}{2}$ 4. 0 5. $-\sqrt{2}$ 6. -2
7. 1 8. undefined 9. undefined 10. undefined 11. -1 12. 1
13. $\frac{\pi}{3}, \frac{2\pi}{3}$ 14. $\frac{2\pi}{3}, \frac{4\pi}{3}$ 15. $\frac{3\pi}{4}, \frac{5\pi}{4}$ 16. $\frac{5\pi}{6}, \frac{11\pi}{6}$ 17. $\frac{7\pi}{6}, \frac{11\pi}{6}$ 18. $0, \pi$
19. $\frac{3\pi}{4}, \frac{7\pi}{4}$ 20. $\frac{3\pi}{4}, \frac{5\pi}{4}$ 21. $\frac{\pi}{6}, \frac{7\pi}{6}$ 22. π 23. $\frac{\pi}{2}, \frac{3\pi}{2}$ 24. $\frac{\pi}{2}$
25. $\frac{-\pi}{6}$ 26. $\frac{2\pi}{3}$ 27. $\frac{-\pi}{3}$ 28. $\frac{-\pi}{3}$ 29. $\frac{5\pi}{6}$ 30. π
31. $\frac{\pi}{4}$ 32. $\frac{3\pi}{4}$ 33. $\frac{\pi}{6}$ 34. $\frac{-\sqrt{3}}{2}$ 35. $\frac{\sqrt{2}}{2}$ 36. $\frac{\pi}{6}$
37. $\frac{3}{5}$ 38. $\frac{12}{13}$ 39. $\frac{5}{12}$ 40. $\frac{-4}{3}$ 41. $\frac{\pi}{3} + 2\pi k, \frac{2\pi}{3} + 2\pi k$
42. $\frac{5\pi}{6} + 2\pi k, \frac{7\pi}{6} + 2\pi k$ 43. $\frac{5\pi}{6} + \pi k$ 44. $\frac{3\pi}{4} + 2\pi k, \frac{5\pi}{4} + 2\pi k$ 45. $\frac{3\pi}{4} + \pi k$
46. $\frac{7\pi}{6} + 2\pi k, \frac{11\pi}{6} + 2\pi k$ 47. $0 + \pi k$ 48. $\frac{3\pi}{2} + 2\pi k$ 49. $\pi + 2\pi k$
50. $\frac{2\pi}{3} + \pi k$ 51. $\frac{2\pi}{3} + 2\pi k, \frac{4\pi}{3} + 2\pi k$ 52. $\frac{5\pi}{4} + 2\pi k, \frac{7\pi}{4} + 2\pi k$
53. $\frac{\pi}{6}, \frac{2\pi}{6}, \frac{7\pi}{6}, \frac{8\pi}{6}$ 54. $\frac{2\pi}{6}, \frac{4\pi}{6}, \frac{8\pi}{6}, \frac{10\pi}{6}$ 55. $\frac{3\pi}{12}, \frac{5\pi}{12}, \frac{11\pi}{12}, \frac{13\pi}{12}, \frac{19\pi}{12}, \frac{21\pi}{12}$
56. $\frac{5\pi}{12}, \frac{11\pi}{12}, \frac{17\pi}{12}, \frac{23\pi}{12}$ 57. $\frac{\pi}{3}, \frac{3\pi}{3}, \frac{5\pi}{3}$ 58. $\frac{5\pi}{8}, \frac{7\pi}{8}, \frac{13\pi}{8}, \frac{15\pi}{8}$
59. $\frac{6\pi}{4}$ 60. $\frac{6\pi}{4}$ 61. $\frac{3\pi}{6}$ 62. NS 63. $\frac{4\pi}{3}$ 64. $\frac{3\pi}{2}$
65. $\frac{\pi}{6}, \frac{3\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{9\pi}{6}, \frac{11\pi}{6}$ 66. 0 67. $\frac{\pi}{6}, \frac{5\pi}{6}, \frac{9\pi}{6}$ 68. $0, \pi, \frac{\pi}{6}, \frac{5\pi}{6}$
69. $\frac{3\pi}{2}, \frac{\pi}{6}, \frac{5\pi}{6}$ 70. $\frac{2\pi}{3}, \frac{4\pi}{3}$ 71. $\frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$ 72. $\frac{\pi}{2}$
73. $\frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{6}, \frac{11\pi}{6}$ 74. $\frac{\pi}{3}, \frac{2\pi}{3}, \frac{4\pi}{3}, \frac{5\pi}{3}$ 75. $\frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}$ 76. $\frac{\pi}{2}, \frac{3\pi}{2}$