

Unit Circle Trig Practice (Radians)

Using your unit circle, evaluate the following trig expressions. EXACT answers only.

1. $\sin\left(\frac{\pi}{6}\right) = \frac{1}{2}$

2. $\sin\left(\frac{5\pi}{3}\right) = -\frac{\sqrt{3}}{2}$

3. $\cos\left(\frac{3\pi}{4}\right) = -\frac{\sqrt{2}}{2}$

4. $\tan(-\pi) = \frac{0}{-1} = 0$

5. $\cos\left(\frac{5\pi}{6}\right) = -\frac{\sqrt{3}}{2}$

6. $\tan\left(\frac{11\pi}{6}\right) = \frac{-1}{2} \cdot \frac{2}{\sqrt{3}} = -\frac{1}{\sqrt{3}} = -\frac{\sqrt{3}}{3}$

7. $\sin\left(\frac{-2\pi}{3}\right) = -\frac{\sqrt{3}}{2}$

8. $\cos\left(\frac{-7\pi}{6}\right) = -\frac{\sqrt{3}}{2}$

9. $\tan\left(\frac{5\pi}{4}\right) = \frac{-\sqrt{2}}{2} \cdot \frac{2}{\sqrt{2}} = -1$

10. $\tan\left(\frac{7\pi}{2}\right) = \frac{-1}{0}$ Undefined!

11. $\cos\left(\frac{17\pi}{4}\right) = \frac{\sqrt{2}}{2}$

12. $\tan\left(\frac{-5\pi}{6}\right) = \frac{-1}{2} \cdot \frac{2}{\sqrt{3}} = -\frac{1}{\sqrt{3}} = -\frac{\sqrt{3}}{3}$

13. $\sec\left(\frac{5\pi}{3}\right) = 2$

14. $\csc\left(\frac{2\pi}{3}\right) = \frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$

15. $\cot\left(\frac{4\pi}{3}\right) = \frac{\sqrt{3}}{3}$

16. $\sec\left(\frac{-4\pi}{3}\right) = \frac{1}{-2} = -\frac{1}{2}$

17. $\csc(2\pi) = \text{Undefined}$

18. $\cot\left(\frac{3\pi}{4}\right) = -1$

19. $\cot\left(\frac{13\pi}{3}\right) = \frac{\sqrt{3}}{3}$

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

21. $\sec\left(-\frac{5\pi}{6}\right) = -\frac{2\sqrt{3}}{3}$

22. $\csc\left(\frac{\pi}{6}\right) = 2$

23. $\sec\left(\frac{\pi}{3}\right) = 2$

24. $\cot\left(\frac{3\pi}{2}\right) = 0$

Unit Circle Trig Practice

Using your unit circle, evaluate the following trig expressions. EXACT answers only.

1. $\sin(30^\circ) = \frac{1}{2}$

2. $\sin(120^\circ) = \frac{\sqrt{3}}{2}$

3. $\cos(225^\circ) = -\frac{\sqrt{2}}{2}$

4. $\tan(30^\circ)$

$$\frac{\frac{1}{2}}{\frac{\sqrt{3}}{2}} = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$$

5. $\cos(330^\circ) = \frac{\sqrt{3}}{2}$

6. $\tan(210^\circ) = \frac{\sqrt{3}}{3}$

$$\frac{-\frac{1}{2}}{-\frac{\sqrt{3}}{2}}$$

7. $\sin(-30^\circ) = -\frac{1}{2}$

8. $\cos(450^\circ) = 0$

9. $\tan(-270^\circ) = \text{Undefined}$

10. $\tan(-150^\circ) = \frac{\sqrt{3}}{3}$

$$\frac{-\frac{1}{2}}{-\frac{\sqrt{3}}{2}}$$

11. $\cos(675^\circ) = \frac{\sqrt{2}}{2}$

12. $\tan(45^\circ) = 1$

13. $\sec(30^\circ) = \frac{2\sqrt{3}}{3}$

$$\frac{2}{\frac{\sqrt{3}}{2}}$$

14. $\csc(330^\circ) = -2$

15. $\cot(210^\circ)$

$$\frac{-\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = \sqrt{3}$$

16. $\sec(-90^\circ)$

Undefined

17. $\csc(180^\circ)$

Undefined

18. $\cot(135^\circ)$

$$\frac{-\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = -1$$

19. $\cot(570^\circ)$

$$\frac{-\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = \sqrt{3}$$

20. $\csc(-30^\circ)$

-2

21. $\sec(-120^\circ)$

-2

22. $\csc(-135^\circ) = -\sqrt{2}$

$$\frac{-2}{\frac{\sqrt{2}}{2}} = -\frac{2\sqrt{2}}{2}$$

23. $\sec(780^\circ)$

2

24. $\cot(270^\circ) = 0$

$$\frac{0}{-1}$$