Answer Key · Lesson 3.8: Exact Values Around the Unit Circle

School Launch · Trigonometry · Unit 3 · Worksheet A · for the parent

Key

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

Find the exact value of $\sin\left(\frac{7\pi}{4}\right)$.

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

Find the exact value of $\sin\left(\frac{\pi}{6}\right)$.

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

Find the exact value of $\cos\left(\frac{4\pi}{3}\right)$.

4. $-\sqrt{3}$

1. $\frac{2\pi}{3} = 120^\circ$, quadrant II, reference angle 60°
2. $\tan 60^\circ$ with the quadrant's sign: $-\sqrt{3}$

Find the exact value of $\tan\left(\frac{2\pi}{3}\right)$.

5. 1

1. $\frac{5\pi}{4} = 225^\circ$, quadrant III, reference angle 45°
2. $\tan 45^\circ$ with the quadrant's sign: 1

Find the exact value of $\tan\left(\frac{5\pi}{4}\right)$.

6. $\sqrt{2}$

1. $\frac{7\pi}{4} = 315^\circ$, quadrant IV, reference angle 45°
2. $\sec 45^\circ$ with the quadrant's sign: $\sqrt{2}$

Find the exact value of $\sec\left(\frac{7\pi}{4}\right)$.

7. -1

1. $\frac{7\pi}{4} = 315^\circ$, quadrant IV, reference angle 45°
2. $\tan 45^\circ$ with the quadrant's sign: -1

Find the exact value of $\tan\left(\frac{7\pi}{4}\right)$.

8. $-\sqrt{2}$

1. $\frac{7\pi}{4} = 315^\circ$, quadrant IV, reference angle 45°
2. $\csc 45^\circ$ with the quadrant's sign: $-\sqrt{2}$

Find the exact value of $\csc\left(\frac{7\pi}{4}\right)$.

9. $-\sqrt{3}$

1. $\frac{5\pi}{6} = 150^\circ$, quadrant II, reference angle 30°
2. $\cot 30^\circ$ with the quadrant's sign: $-\sqrt{3}$

Find the exact value of $\cot\left(\frac{5\pi}{6}\right)$.

10. 1

1. $-\frac{3\pi}{4} = -135^\circ$, quadrant III, reference angle 45°
2. $\cot 45^\circ$ with the quadrant's sign: 1

Find the exact value of $\cot\left(-\frac{3\pi}{4}\right)$.