

Exact Unit Circle Practice

For each angle, identify its quadrant and reference angle, then give exact sin, cos, and tan values.

1. $\theta = 7\pi/4$: give the terminal-side location, reference angle when applicable, $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

2. $\theta = 5\pi/3$: give the terminal-side location, reference angle when applicable, $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

Exact Unit Circle Practice

For each angle, identify its quadrant and reference angle, then give exact sin, cos, and tan values.

3. $\theta = 0$: give the terminal-side location, reference angle when applicable, $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

4. $\theta = \pi/6$: give the terminal-side location, reference angle when applicable, $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

Exact Unit Circle Practice

For each angle, identify its quadrant and reference angle, then give exact sin, cos, and tan values.

5. $\theta = 2\pi/3$: give the terminal-side location, reference angle when applicable, $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

6. $\theta = 5\pi/6$: give the terminal-side location, reference angle when applicable, $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

Exact Unit Circle Practice

Worked Answer Key

For each angle, identify its quadrant and reference angle, then give exact sin, cos, and tan values.

1. $\theta = 7\pi/4$: give the terminal-side location, reference angle when applicable, $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

Terminal side in quadrant IV; reference $\pi/4$; $\sin = -\sqrt{2}/2$, $\cos = \sqrt{2}/2$, $\tan = -1$.

1. The terminal side is in quadrant IV; the acute reference angle is $\pi/4$.
2. Use unit-circle coordinates $(\cos, \sin) = (\sqrt{2}/2, -\sqrt{2}/2)$.
3. $\tan = \sin/\cos = -1$.

Exact Unit Circle Practice

Worked Answer Key

For each angle, identify its quadrant and reference angle, then give exact sin, cos, and tan values.

2. $\theta = 5\pi/3$: give the terminal-side location, reference angle when applicable, $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

Terminal side in quadrant IV; reference $\pi/3$; $\sin = -\sqrt{3}/2$, $\cos = 1/2$, $\tan = -\sqrt{3}$.

1. The terminal side is in quadrant IV; the acute reference angle is $\pi/3$.
2. Use unit-circle coordinates $(\cos, \sin) = (1/2, -\sqrt{3}/2)$.
3. $\tan = \sin/\cos = -\sqrt{3}$.

Exact Unit Circle Practice

Worked Answer Key

For each angle, identify its quadrant and reference angle, then give exact sin, cos, and tan values.

3. $\theta = 0$: give the terminal-side location, reference angle when applicable, $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

Terminal side on the positive x-axis; reference not applicable; $\sin = 0$, $\cos = 1$, $\tan = 0$.

1. The terminal side is on the positive x-axis; the acute reference angle is not applicable.
2. Use unit-circle coordinates $(\cos, \sin) = (1, 0)$.
3. $\tan = \sin/\cos = 0$.

Exact Unit Circle Practice

Worked Answer Key

For each angle, identify its quadrant and reference angle, then give exact sin, cos, and tan values.

4. $\theta = \pi/6$: give the terminal-side location, reference angle when applicable, $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

Terminal side in quadrant I; reference $\pi/6$; $\sin = 1/2$, $\cos = \sqrt{3}/2$, $\tan = \sqrt{3}/3$.

1. The terminal side is in quadrant I; the acute reference angle is $\pi/6$.
2. Use unit-circle coordinates $(\cos, \sin) = (\sqrt{3}/2, 1/2)$.
3. $\tan = \sin/\cos = \sqrt{3}/3$.

Exact Unit Circle Practice

Worked Answer Key

For each angle, identify its quadrant and reference angle, then give exact sin, cos, and tan values.

5. $\theta = 2\pi/3$: give the terminal-side location, reference angle when applicable, $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

Terminal side in quadrant II; reference $\pi/3$; $\sin = \sqrt{3}/2$, $\cos = -1/2$, $\tan = -\sqrt{3}$.

1. The terminal side is in quadrant II; the acute reference angle is $\pi/3$.
2. Use unit-circle coordinates $(\cos, \sin) = (-1/2, \sqrt{3}/2)$.
3. $\tan = \sin/\cos = -\sqrt{3}$.

Exact Unit Circle Practice

Worked Answer Key

For each angle, identify its quadrant and reference angle, then give exact sin, cos, and tan values.

6. $\theta = 5\pi/6$: give the terminal-side location, reference angle when applicable, $\sin(\theta)$, $\cos(\theta)$, and $\tan(\theta)$.

Terminal side in quadrant II; reference $\pi/6$; $\sin = 1/2$, $\cos = -\sqrt{3}/2$, $\tan = -\sqrt{3}/3$.

1. The terminal side is in quadrant II; the acute reference angle is $\pi/6$.
2. Use unit-circle coordinates $(\cos, \sin) = (-\sqrt{3}/2, 1/2)$.
3. $\tan = \sin/\cos = -\sqrt{3}/3$.