Unit Circle Quiz Answer Key PDF

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What is the value of tan(π)?

A. 0 ✓

B. 1

C. Undefined

D. -1

What is the radius of the unit circle?

A. 0

B. 1 ✓

C. π

D. 2

What is the cosine of π/2 radians?

A. 0 ✓

B. 1

C. -1

D. √2/2

What is the period of the sine function?

A. π

B. 2π ✓

C. 4π

D. π/2

Which trigonometric function is undefined at π/2?

A. Sine
B. Cosine
C. Tanget ✓
D. Secant

In which quadrant is the angle 3π/4 located?

A. First
B. Second ✓
C. Third
D. Fourth

Which of the following angles corresponds to the point (1, 0) on the unit circle?

A. π/2
B. π
C. 0 ✓
D. 3π/2

Describe how the unit circle can be used to find the sine and cosine of an angle.

On the unit circle, the x-coordinate of a point represents the cosine of the angle, and the y-coordinate represents the sine. By drawing a line from the origin to the circle at the given angle, the intersection point's coordinates provide the sine and cosine values.

How do the coordinates of points on the unit circle relate to the values of trigonometric functions?

The coordinates of a point on the unit circle are (cos(θ), sin(θ)), where θ is the angle formed with the positive x-axis. These coordinates directly give the values of the cosine and sine functions for that angle.

Discuss the significance of symmetry in the unit circle and how it affects trigonometric functions.

The unit circle's symmetry helps determine trigonometric function values in different quadrants. For example, sine is positive in the first and second quadrants and negative in the third and fourth. Cosine is positive in the first and fourth quadrants and negative in the second and third. This

symmetry allows for easy calculation of function values for supplementary, complementary, and other related angles.

Which of the following are the coordinates of the point at π/4 radians on the unit circle?

A. (√2/2, √2/2) ✓
B. (1, 0)
C. (0, 1)
D. (-1, 0)

Provide a real-world example where the unit circle is used to model a periodic phenomenon.

An example of the unit circle modeling a periodic phenomenon is the motion of a pendulum, where the angle of swing can be represented using the sine and cosine functions derived from the unit circle.

Which angles have a cosine value of 0?

A. π/2 ✓
B. π
C. 3π/2 ✓
D. 2π

Which of the following angles are located in the fourth quadrant?

A. 7π/4 ✓
B. π/4
C. 5π/3 ✓
D. 3π/2

Which of the following are properties of the unit circle?

A. Radius of 1 ✓
B. Centered at the origin ✓
C. Circumference of π
D. Used to define trigonometric functions ✓

What is the relationship between radians and degrees, and how can you convert between them?

To convert from degrees to radians, multiply by π/180; to convert from radians to degrees, multiply by 180/π.

Explain why the unit circle is important in trigonometry.

The unit circle is important in trigonometry because it defines the sine and cosine functions for all angles, simplifies calculations, and illustrates the periodic nature of trigonometric functions.

What is the sine of π radians?

A. 1

B. 0 ✓

C. -1

D. √3/2

Select all angles that have a sine value of 1.

A. π/2 ✓

B. π

C. 3π/2

D. 2π

Which trigonometric functions are even?

A. Sine

B. Cosine ✓

C. Tanget

D. Secant ✓