Sine and Cosine Quiz PDF

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Describe a real-world application where sine and cosine functions are used to model periodic phenomena.

How does the phase shift affect the graph of a cosine function? Provide an example with a sketch.

Explain the significance of the Pythagorean identity in trigonometry.

How do you convert an angle from degrees to radians? Provide a formula and an example.

Which transformation affects the amplitude of a sine wave?

- ◯ y = sin(x + C)
- ◯ y = A · sin(x)
- ◯ y = sin(Bx)
- ◯ y = sin(x) + D

Which of the following are properties of the sine function?

- ☐ Periodic with period 2π
- ☐ Range [-1, 1]
- ☐ Symmetric about the y-axis
- ☐ Maximum value at π

What is the cosine of 0° or 0 radians?

- ◯ 0
- ◯ 1
- ◯ -1
- ◯ √2/2

Which angles have a cosine value of 0?

- ☐ 90° or π/2
- ☐ 180° or π
- ☐ 270° or 3π/2
- ☐ 360° or 2π

What is the period of the cosine function?

- ◯ π
- ◯ 2π
- ◯ 4π

◯ π/2

What is the sine of 90° or π/2 radians?

◯ 0
◯ 1
◯ -1
◯ √2/2

Which transformations affect the period of a sine wave?

☐ y = sin(x + C)
☐ y = A · sin(x)
☐ y = sin(Bx)
☐ y = sin(x) + D

Which of the following is the Pythagorean identity?

◯ sin(x) + cos(x) = 1
◯ $\sin^2(x) + \cos^2(x) = 1$
◯ sin(x) · cos(x) = 1
◯ sin(x) - cos(x) = 1

Which of the following are double angle formulas?

☐ sin(2x) = 2sin(x)cos(x)
☐ $\cos(2x) = \cos^2(x) - \sin^2(x)$
☐ $\sin(2x) = \sin^2(x) + \cos^2(x)$
☐ $\cos(2x) = 1 - 2\sin^2(x)$

Explain how the unit circle is used to define the sine and cosine functions for all angles.

Describe the effect of a vertical shift on the graph of a sine function.

What is the cosine of 180° or π radians?

- ◯ 0
- ◯ 1
- ◯ -1
- ◯ √2/2

In which quadrant is the sine function positive?

- ◯ First and second
- ◯ Second and third
- ◯ Third and fourth
- ◯ First and fourth

What is the range of the sine function?

- ◯ [-2, 2]
- ◯ [-1, 1]
- ◯ [0, 1]
- ◯ [0, 2]

Which of the following are true about the unit circle?

- ☐ Radius is 1
- ☐ Centered at the origin
- ☐ Used to define sine and cosine for all angles
- ☐ Only applicable for angles in the first quadrant

Which statements about the cosine function are true?

- [ ] Cosine is an even function
- [ ] Cosine has a period of π
- [ ] Cosine is symmetric about the y-axis
- [ ] Cosine equals zero at 90° and 270°