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Tangent and Cotangent Quiz PDF

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Select the true statements about the Pythagorean identities involving tangent and cotangent.

☐ $1 + \tan^2(\theta) = \sec^2(\theta)$
☐ $1 + \cot^2(\theta) = \csc^2(\theta)$
☐ $\tan^2(\theta) + 1 = \csc^2(\theta)$
☐ $\cot^2(\theta) + 1 = \sec^2(\theta)$

What is the value of tan(0)?

○ 0
○ 1
○ Undefined
○ ∞

How would you use the unit circle to find the value of tan(π/3)?

Discuss the significance of the tangent function in real-world applications, providing at least one example.

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How does the periodicity of the tangent function affect its graph and solutions to equations involving tangent?

Which of the following are true for the equation tan(θ) = a?

☐ It has infinite solutions.
☐ Solutions repeat every π radians.
☐ It is undefined for a = 0.
☐ Solutions can be found using the unit circle.

Describe the behavior of the cotangent function as it approaches its vertical asymptotes.

What is the value of cot(π/4)?

○ 0
○ 1
○ √2

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○ Undefined

Which of the following angles will make cotangent undefined?

○ π/3
○ π/2
○ π
○ 3π/2

Select the correct identities involving cotangent.

☐ cot(θ) = cos(θ)/sin(θ)
☐ cot(θ) = 1/tan(θ)
☐ cot(θ) = sin(θ)/cos(θ)
☐ cot(θ) = 1/sin(θ)

At which angle is the tangent function undefined?

○ 0
○ π/4
○ π/2
○ π

What is the symmetry of the cotangent function?

○ Even
○ Odd
○ Neither
○ Both

What is the period of the tangent function?

○ π/2
○ π
○ 2π
○ 4π

Which identity is correct for tangent?

○ tan(θ) = cos(θ)/sin(θ)

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○ tan(θ) = sin(θ)/cos(θ)
○ tan(θ) = 1/sin(θ)
○ tan(θ) = 1/cos(θ)

Explain the relationship between the tangent and cotangent functions in terms of their graphs and asymptotes.

Which of the following is the reciprocal of the tangent function?

○ Sine
○ Cosine
○ Secant
○ Cotangent

Explain why the tangent function is considered an odd function.

Which of the following are true about the tangent function?

☐ It is periodic with period 2π.
☐ It is an odd function.
☐ It has vertical asymptotes at θ = π/2 + kπ.
☐ It is undefined at θ = kπ.

Which of the following statements are true about the tangent graph?

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☐ It passes through the origin.

☐ It has a horizontal asymptote at y = 0.

☐ It is symmetric about the origin.

☐ It repeats every π radians.

Which of the following are characteristics of the cotangent function?

☐ Period is π.

☐ It is an even function.

☐ It has vertical asymptotes at θ = kπ.

☐ It is undefined at θ = π/2 + kπ.

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