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Conic Sections Quiz PDF

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Which conic sections can have a center at the origin? (Select all that apply)

☐ Circle

☐ Ellipse

☐ Parabola

☐ Hyperbola

Which of the following is a conic section?

○ Triangle

○ Rectangle

○ Circle

○ Pentagon

Which conic section has a directrix?

○ Circle

○ Ellipse

○ Parabola

○ Hyperbola

Which of the following are properties of a hyperbola? (Select all that apply)

☐ Two branches

☐ Eccentricity greater than 1

☐ A single focus

☐ Asymptotes

In which conic section are the foci located inside the curve?

○ Circle

○ Ellipse

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◯ Parabola
◯ Hyperbola

Which conic section is defined by the equation y = ax^2 + bx + c?

◯ Circle
◯ Ellipse
◯ Parabola
◯ Hyperbola

What are the characteristics of a parabola? (Select all that apply)

☐ A single focus
☐ A directrix
☐ Two axes of symmetry
☐ Vertex

Which conic section can be used to model the path of a satellite orbitin Earth?

◯ Circle
◯ Ellipse
◯ Parabola
◯ Hyperbola

Compare and contrast the properties of an ellipse and a hyperbola.

Provide a real-life example of a hyperbola and explain its application.

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[ ]

Describe the role of the foci in defining an ellipse.

[ ]

What is the eccentricity of a circle?

○ 0
○ 1
○ Greater than 1
○ Less than 0

Which conic sections have an eccentricity less than 1? (Select all that apply)

☐ Circle
☐ Ellipse
☐ Parabola
☐ Hyperbola

Explain how the eccentricity of a conic section affects its shape.

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How does the equation of a parabola change when it is translated horizontally and vertically?

Who is known for their significant contributions to the study of conic sections?

○ Euclid

○ Pythagoras

○ Apollonius of Perga

○ Archimedes

In which fields are conic sections commonly applied? (Select all that apply)

☐ Architecture

☐ Biology

☐ Engineering

☐ Astronomy

Which transformations can be applied to conic sections? (Select all that apply)

☐ Translation

☐ Rotation

☐ Reflection

☐ Scaling

Discuss the significance of the directrix in the definition of a parabola.

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What is the standard form of the equation for a horizontal ellipse?

◯ (x-h)^2 + (y-k)^2 = r^2
◯ (x-h)^2/a^2 + (y-k)^2/b^2 = 1
◯ (x-h)^2/b^2 - (y-k)^2/a^2 = 1
◯ y = ax^2 + bx + c

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