AOS Math 10 Conic Sections Test

February 2, 2024

# True / False

The major axis of a (non-circular) ellipse is always longer than the minor axis. The transverse axis of a hyperbola is always longer than the conjugate axis. The foci of an ellipse are on the minor axis. The focus of the parabola is the lowest point on the parabola. The graph of fits entirely inside the graph of The directrix of a parabola is perpendicular to the axis of symmetry. The distance between two foci of an ellipse is . The eccentricity of an ellipse can be . A circle is an ellipse with . The graphs of and have the same asymptotes.

# Multiple Choice

**Work must be shown for credit**

**Note the scale is 2 below.** Which is the graph of ?

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What are the foci of the hyperbola ?

Which is **not** a vertex or co-vertex of the ellipse $\dfrac{\sage{(x-0)^2}}{\sage{3^2}} + \dfrac{\sage{(y-2)^2}}{\sage{sqrt(7)^2}}=1$

What is the equation of a parabola with

* a vertex at
* a horizontal axis of symmetry
* the parabola passes through the point

$\sage{(x--3)^2}=\sage{4\*3}(\sage{(y--2)})$

$\sage{(x-3)^2}=\sage{4\*3}(\sage{(y-2)})$

$\sage{(x-3)^2}=\sage{4\*3/4}(\sage{(y--2)})$

$\sage{(x-3)^2}=\sage{4\*1/9}(\sage{(y--2)})$

$\sage{(x-3)^2}=\sage{4\*1}(\sage{(y--2)})$

Write the equation of the ellipse that has a major axis 28 units long and is parallel to the axis, a minor axis 26 units long, and a center at .

$\dfrac{\sage{(x--11)^2}}{\sage{14^2}} + \dfrac{\sage{(y--8)^2}}{\sage{13^2}}=1$

$\dfrac{\sage{(x-11)^2}}{\sage{14^2}} + \dfrac{\sage{(y-8)^2}}{\sage{13^2}}=1$

$\dfrac{\sage{(x--11)^2}}{\sage{13^2}} + \dfrac{\sage{(y--8)^2}}{\sage{14^2}}=1$

$\dfrac{\sage{(x-11)^2}}{\sage{13^2}} + \dfrac{\sage{(y-8)^2}}{\sage{14^2}}=1$

Given the equation of a circle in standard form: . Write the equation in general form.