

Section 10.3 Ellipses

Objective: In this lesson you learned how to write the standard form of the equation of an ellipse.

Course Number

Instructor

Date

Important Vocabulary

Define each term or concept.

Foci**Vertices****Major axis****Center****Minor axis****I. Introduction** (Pages 786–789)An **ellipse** is . . .***What you should learn***

How to write the standard form of the equation of an ellipse

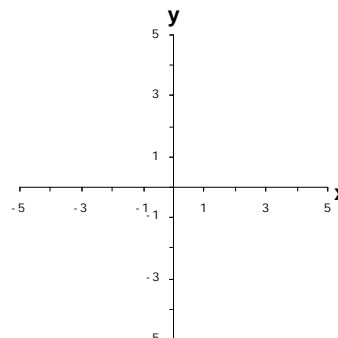
The standard form of the equation of an ellipse centered at (h, k) and having a horizontal major axis of length $2a$ and minor axis of length $2b$, where $0 < b < a$, is: _____

The standard form of the equation of an ellipse centered at (h, k) and having a vertical major axis of length $2a$ and minor axis of length $2b$, where $0 < b < a$, is: _____

In both cases, the foci lie on the major axis, c units from the center, with $c^2 =$ _____ .

If the center is at the origin $(0, 0)$, the equation takes one of the following forms: _____ or _____ .

Example 1: Sketch the ellipse given by $4x^2 + 25y^2 = 100$.



II. Applications of Ellipses (Page 790)

Describe a real-life application in which parabolas are used.

What you should learn

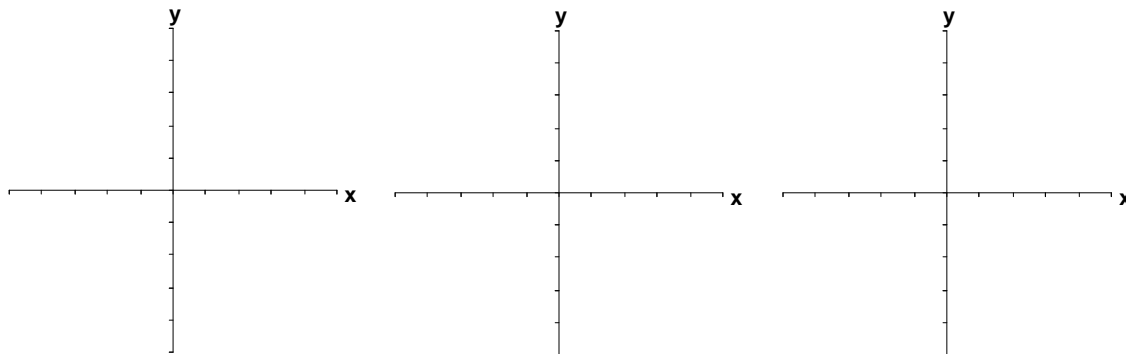
How to use properties of ellipses to model and solve real-life problems

III. Eccentricity (Pages 790–791)

_____ measures the ovalness of an ellipse. It is given by the ratio $e = \frac{\text{distance from center to focus}}{\text{distance from center to vertex}}$. For every ellipse, the value of e lies between _____ and _____. For an elongated ellipse, the value of e is close to _____.

What you should learn

How to find the eccentricity of an ellipse

Additional notes**Homework Assignment**

Page(s)

Exercises