

**Section 6.2 Introduction to Conics: Parabolas**

**Objective:** In this lesson you learned how to write the standard form of the equation of a parabola.

Course Number

Instructor

Date

**Important Vocabulary**

Define each term or concept.

**Directrix****Focus****Focal chord****Latus rectum****Tangent****I. Conics** (Page 413)

A **conic section**, or **conic**, is . . .

***What you should learn***

How to recognize a conic as the intersection of a plane and a double-napped cone

Name the four basic conic sections:

In the formation of the four basic conics, the intersecting plane does not pass through the vertex of the cone. When the plane does pass through the vertex, the resulting figure is a(n) \_\_\_\_\_, such as . . .

**II. Parabolas** (Pages 414–416)

A **parabola** is . . .

***What you should learn***

How to write the standard form of the equation of a parabola

The \_\_\_\_\_ of a parabola is the midpoint between the focus and the directrix. The \_\_\_\_\_ of the parabola is the line passing through the focus and the vertex.

The standard form of the equation of a parabola with a vertical axis having a vertex at  $(h, k)$  and directrix  $y = k - p$  is

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The standard form of the equation of a parabola with a horizontal axis having a vertex at  $(h, k)$  and directrix  $x = h - p$  is

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The focus lies on the axis  $p$  units (directed distance) from the vertex. If the vertex is at the origin  $(0, 0)$ , the equation takes on one of the following forms:

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**Example 1:** Find the standard form of the equation of the parabola with vertex at the origin and focus  $(1, 0)$ .

### III. Applications of Parabolas (Pages 416–417)

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

***What you should learn***  
How to use the reflective property of parabolas to solve real-life problems

The reflective property of a parabola states that the tangent line to a parabola at a point  $P$  makes equal angles with the following two lines:

- 1)
- 2)

#### Homework Assignment

Page(s)

Exercises