Chapter 10 Topics in Analytic Geometry

Course Number

Instructor

Date

Section 10.1 Introduction to Conics: Parabolas

Objective: In this lesson you learned how to write the standard equation of a parabola, and analyze and sketch the graphs of parabolas.

Important Vocabulary Define each term or concept.

Directrix

Focus

Tangent

I. Conics (Page 696)

What you should learn
How to recognize a conic as the intersection of a plane and a double-napped cone

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

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 697–699)

What you should learn
How to write equations of parabolas in standard form

A **parabola** is . . .

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.

Copyright © Houghton Mifflin Company. All rights reserved.

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

_____

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

_____

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:

_____

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 699–700)

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

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

A focal chord is . . .

The specific focal chord perpendicular to the axis of a parabola is called the _____.

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

Copyright © Houghton Mifflin Company. All rights reserved.