UNIT 11: Conic Sections

Objectives: Upon completion of the unit, students will be able to:

- Name all conic sections (circle, ellipse, parabola, hyperbola)
- Graph each of the conic sections, labeling all important parts
- Determine the standard form of each conic section
- Find information such as center, vertices, foci, eccentricity, asymptotes and directrix
- Find an equation given specific points or lengths
- Determine what type of conic section it is by looking at general form
- Use completing the square to write a conic section in standard form, and to aid in determining what type of conic it is

Video Lectures	Video Examples	Section from Text (WebAssign)
1a. Introduction to Conic Sections 1b. Parabolas (part I and part II)	1a. Parabola – vertex at origin 1b. Parabola – vertex not at origin 1c. Parabola – requires Completing the square (leading coefficient 1) 1d. Parabola – requires Completing the square (leading coefficient 1) 1e. Find equation for parabola given focus and vertex	11.1
2a. Ellipses (part I and part II)	2a. Graph an ellipse, center at origin, vertical 2b. Graph an ellipse, center not at origin, horizontal 2c. Find the equation of an ellipse (requires Completing the Square) 2d. Find the equation of an ellipse given center, focus and vertex 2e. Write equation of ellipse given vertices and eccentricity (patrick jmt)	11.2
3a. Hyperbolas (part I and part II)	3a. Graph a hyperbola with center at origin (horizontal) 3b. Graph a hyperbola with center not at origin (horizontal) 3c. Graph a hyperbola with center not at origin (vertical) 3d. Find the equation of a hyperbola	11.3
4a. Determine the type of conic by looking at coefficients	4a. Name that conic (patrick jmt)	11.4