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| **Unit 6 (Conics)** | **Precalculus** |
| **Main Topic/Book Section** | **Objectives** | **Assignments** |
| 10.2 Intro to Conics: Parabolas | * Define a parabola
* Derive the equation of a parabola based on the definition.
* Given a focus and vertex, determine the equation of a parabola.
* Given the equation of a parabola, determine the focus.
* Write the equation of a parabola in standard form.
* Determine the directrix, vertex, and focus of a parabola given an equation.
* Sketch a graph of a parabola by hand and with a calculator.
* Solve applications involving parabolas.
 | 1) p. 740 #’s 5-10 (all), 12-20 (even)2) p. 740 #’s 21-283) p. 741 30-50 (even)4) p. 741-742 #’s 59-61, 63, 64 |
| 10.3 Ellipses and Circles | * Define an ellipse.
* Derive the equation for an ellipse.
* Find the equation of an ellipse with given characteristics.
* Sketch an ellipse.
* Find the center, vertices, and foci of an ellipse if given an equation.
* Solve application problems involving ellipses.
* Determine the eccentricity of an ellipse.
* Complete the square to put the equation of an ellipse into standard form.
 | 5) p. 750 #’s 1-6 (all), 10-16 (even)6) p. 750 #’s 20-30 (even)7) p. 751 #’s 36-44 (even)8) p. 751 #’s 45-53 (all)9) p. 751-752 #’s 57-60 (all) |
| **QUIZ** |  |  |
| 10.4 Hyperbolas | * Define a hyperbola.
* Find the standard equation of a hyperbola with given characteristics.
* Find the equations of the asymptotes of a hyperbola.
* Sketch a graph of a hyperbola.
* Find the coordinates of the foci of a hyperbola.
* Solve application problems involving hyperbolas.
* Classify a conic from its general equation.
 | 10) p. 760 #’s 1-4 (all), 6-12 (even)11) p. 760 #’s 14, 16, 17-2012) p. 760 #’s 22-38 (even)13) p. 761-762 #’s 39, 42, 43, 4414) p. 762 #’s 46-60 (even) |
| **Applications to Astronomy** |  | 15) Problem Set-Graded for accuracy |
| **TEST** |