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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 21-28  3) 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, 17-20  12) p. 760 #’s 22-38 (even)  13) p. 761-762 #’s 39, 42, 43, 44  14) p. 762 #’s 46-60 (even) | |
| **Applications to Astronomy** |  | | 15) Problem Set-Graded for accuracy | |
| **TEST** | | | | |