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| **PreCalculus Honors Curriculum Map** | | | |
| **Days** | **Section** | **Topic** | **Notes** |
|  | Chapter 1 | Graphs |  |
| 1 | Intro | Introduction to class | Camel Problem |
| 1 | 1.1 | Rectangular Coordinates; Graphing Calc; Graphing Equations | Use class time for cooperative problem solving/”think” problems |
| 1 | 1.2 | Intercepts; Symmetry; Graphing Key Equations |  |
| 1 | 1.3 | Solving Equations using a calculator |  |
| 1 | 1.4 | Review of lines (equations and graphs) |  |
| 1 | 1.5 | Circles (equations and graphs) |  |
| 1 |  | **Float Day** |  |
| 1 |  | **Review for Test** |  |
| 1 |  | **Test Chapter 1** |  |
| **9 days** |  | **Total** |  |
|  | Chapter 2 | Functions and their Graphs |  |
| 1 | 2.1/2.2 | Functions and Relations, Values, Domain, Operations |  |
| 1 | 2.2/2.3 | Graphs of functions, Properties of functions |  |
| 1 | 2.4 | Library of Functions | Emphasize Greatest integer and Piecewise |
| 1 | 2.5 | Graphing functions using transformations | Topic applied throughout book |
| 3 | 2.6 | Mathematical Models | Worksheet with class |
|  |  |  | p.115 # 1-26 (2 days) |
|  |  |  | (cont) |
| 1 |  | **Float Day** |  |
| 1 |  | **Review for Test** |  |
| 1 |  | **Test** |  |
| **10 days** |  | **Total** |  |
|  | Chapter 3 | Linear and Quadratic Functions |  |
| 2 | 3.1 | Linear functions and models | Investment problem with class,  T-Shirt Problem  Emphasize calculator use of complete graph |
|  |  | Continued | Limo Problem,  Select problems from book where formulas are not given |
| 1 | 3.3 | Quadratic Functions and their properties |  |
| 2 | 3.2/3.4 | Building Quadratic Models from Verbal Descriptions | Show LinReg on Calculator as well as Quadratic modeling from list |
|  |  | Continued |  |
| 1 | 3.5 | Inequalities with Quadratic Functions | Emphasize the interval |
| 1 |  | **Float Day** |  |
| 1 |  | **Review** |  |
| 1 |  | **Test** |  |
| **9 days** |  | **Total** |  |

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|  | Chapter 4 | Polynomial and Rational Functions |  |
| 2 | 4.1 | Polynomial Functions; degree and graphing by transformations |  |
|  | 4.1 | Zeros of functions and analyzing the graphs of polynomial functions |  |
| 2 | 4.2 | Properties of Rational Functions |  |
|  | 4.2 | Asymptotes |  |
| 2 | 4.3 | Graphs of Rational Functions |  |
|  | 4.3 |  |  |
| 1 | 4.4 | Polynomial and Rational Inequalities |  |
| 2 | 4.5 | Zeros of Polynomial Functions; Synthetic Division and Theorems |  |
|  | 4.5 | More Theorems |  |
| 1 | 4.6 | Complex Zeros; Fundamental Theorem of Algebra |  |
| 2 | Cubic | Cubic Modeling |  |
|  |  | Continued |  |
| 1 |  | **Review** |  |
| 1 |  | **Test** |  |
| 14 days |  | **Total** |  |
|  | Chapter 5 | Exponential and Logarithmic Functions |  |
| 1 | 5.1 | Composition Functions |  |
| 1 | 5.2 | 1-1 Functions, Inverse Functions | Emphasize graphing |
| 2 | 5.3 | Exponential Functions |  |
|  | 5.3 | Solving exponential functions | Worksheet for applications |
| 2 | 5.4 | Logarithmic Functions |  |
|  | 5.4 | Graph and Solve Logarithmic Functions |  |
| 1 | 5.5 | Properties of Logarithms | Add worksheet? |
| 1 | 5.6 | Logarithmic and Exponential functions |  |
| 1 | 5.7 | Financial Models |  |
| 2 | 5.8 | Exponential Growth and Decay | Make worksheet  Cost of living worksheet |
|  | 5.8 | Newton’s Law, Logistic Growth and Decay | Look for additional problems  H1N1 online problem |
| 1 | 5.9 | Modeling from data |  |
| 1 |  | **Review** |  |
| 1 |  | **Test** |  |
| **14 days** |  | **Total** |  |

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|  | Chapter 6 | Trigonometric Functions |  |
| 2 | 6.1 | Angles and their measures |  |
|  | 6.1 | Continued |  |
| 2 | 6.2 | Trig functions using the unit circle |  |
|  | 6.2 | Continued |  |
| 2 | 6.3 | Properties of trig functions | Emphasize all three forms of Pythagorean Identities |
|  | 6.3 |  | Transformation worksheet |
| 1 | 6.4 | Graph of sine and cosine |  |
| 1 | 6.5 | Graphs of tangent, cotangent, secant, and cosecant |  |
| 2 | 6.6 | Phase shift; writing a sinusoidal curve rom data | Show phase shift as: |
|  |  | Continued |  |
| 1 |  | **Review** |  |
| 1 |  | **Test** |  |
| **12 days** |  | **Total** |  |
|  | Chapter 7 | Analytic Trigonometry |  |
| 1 | 7.1 | Inverse sine, cosine, and tangent |  |
| 1 | 7.2 | Inverse trig functions and continued |  |
| 2 | 7.3 | Trig Identities |  |
|  | 7.3 | Trig ID cont. |  |
| 1 | 7.4 | Sum and Difference Formula |  |
| 1 | 7.5 | Double-angle and Half-angle formulas | Emphasize Double angle |
| 1 | 7.7 | Solving Trig Equations | Supplement with challenging questions from other resources |
| 2 | 7.8 | Solving Trig Equations Part 2 |  |
|  | 7.8 | Solving Trig Equations cont |  |
| 1 |  | **Review** |  |
| 1 |  | **Test** |  |
| **11 days** |  | **Total** |  |
|  | Chapter 8 | Applications of Trigonometric Functions |  |
|  | 8.1 | Right Triangle Trigonometry; Applications |  |
|  | 8.2 | The Law of Sines |  |
|  | 8.3 | The Law of Cosines |  |
|  | 8.4 | Area of a Triangle |  |
|  | 8.5 | Simple Harmonic Motion; Damped Motion; Combining Waves |  |

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|  | Chapter 9 | Polar Coordinates; Vectors |  |
| 1 | 9.1 | Polar Coordinates (plot and convert) |  |
| 2 | 9.2 | Polar Graphing | Polar WS #1 in class  #2 for HW |
|  | 9.2 | Cont. |  |
| 2 | 9.3 | Complex Numbers; Polar form; products and quotients | Introduce cis form |
|  | 9.3 | Powers and roots of complex numbers |  |
| 2 | 9.4 | Vectors; geometric | Add word problems |
|  | 9.4 | Vectors; geometric and algebraic | Add word problems |
| 2 | 9.5 | Dot Product |  |
|  | 9.5 | Dot product applications |  |
| 2 | 9.6 | Vectors in space | Graph in 3D |
|  | 9.6 | Vectors in space (cont.) |  |
| 2 | 9.7 | Cross product |  |
|  | 9.7 | Cross product | Equation of a plane |
| 1 |  | **Review** |  |
| 1 |  | **Test** |  |
| **15 days** |  | **Total** |  |
|  | Chapter 10 | Analytic Geometry |  |
| 1 | 10.1 | Intro to conics; Circles |  |
| 1 | 10.2 | Parabolas |  |
| 2 | 10.3 | Ellipse |  |
|  | 10.3 | Ellipse (cont) |  |
| 2 | 10.4 | Hyperbola |  |
|  | 10.4 | Hyperbola (cont) |  |
| 1 | 10.6 | Polar equations of Conics; eccentricity |  |
| 3 | 10.7 | Parametric Graphing | Worksheet #1 |
|  | 10.7 | Parametric Graphing | Worksheet #2 |
|  | 10.7 | Parametric Graphing |  |
| 1 |  | **Review** |  |
| 1 |  | **Test** |  |
| **13 days** |  | **Total** |  |
|  | Chapter 11 | Systems of Equations and Inequalities |  |
| 1 | 11.1 | System of Linear Equations; substitution and elimination |  |
| 1 | 11.6 | Systems of Nonlinear Equations |  |
| 1 | 11.7 | Systems of Inequalities |  |
| 1 | 11.8 | Linear Programming |  |
| 1 |  | **Review** |  |
| 1 |  | **Test** |  |
| **6 days** |  | **Total** |  |
|  | Chapter 12 | Sequences; Induction; the Binomial Theorem |  |
| 1 | 12.1 | Sequences |  |
| 1 | 12.2 | Arithmetic Sequences |  |
| 1 | 12.3 | Geometric sequences; Geometric series |  |
| 1 | 12.4 | Mathematical Induction |  |
| 1 | 12.5 | The Binomial Theorem |  |
| 1 |  | **Review** |  |
| 1 |  | **Test** |  |
| **7 days** |  | **Total** |  |
|  | Chapter 13 | Counting and Probability |  |
| 2 | 13.1 | Counting |  |
|  | 13.1 | Continued |  |
| 1 | 13.3 | Probability |  |
| 1 |  | **Review** |  |
| 1 |  | **Test** |  |
| **5 days** |  | **Total** |  |
|  | Chapter 14 | A Preview of Calculus:  The Limit, Derivative, and Integral of a Function |  |
| 2 | 14.1 | Finding Limits using tables and graphs |  |
|  | 14.1 | Continued |  |
| 2 | 14.2 | Algebra techniques for finding limits |  |
|  | 14.2 | Continued |  |
| 2 | 14.3 | One-sided limits; continuous functions |  |
|  | 14.3 | Continued |  |
| 1 | 14.4 | The Tangent Problem; The Derivative |  |
| 2 | 14.5 | The Area Problem; The Integral |  |
|  | 14.5 | Continued |  |
| 2 | Cubic |  |  |
| 1 |  | **Review** |  |
| 1 |  | **Test** |  |
| **13 days** |  | **Total** |  |