

*Curriculum Guide Precalculus I*

**Unit 1: Review**

**9 Lessons**

**PC#4**

<b>Objectives</b>	<b>Methods</b>	<b>Resources</b>	<b>Assessment</b>
The students will 1. Use synthetic division to divide polynomials. 2. Reduce a rational expression to lowest terms. 3. Perform the four basic operations on rational expressions. 4. Simplify mixed quotients (complex fractions). 5. Simplify expressions containing radicals and rational exponents.	<ul style="list-style-type: none"><li>• teacher lecture</li><li>• teacher working examples on the board</li><li>• teacher showing problems on overhead projector</li><li>• student guided practice of problems in book</li><li>• cooperative learning groups</li><li>• individual assistance</li><li>• partner work</li><li>• worksheets</li><li>• homework</li><li>• video</li><li>• internet websites</li></ul>	Algebra & Trigonometry; 7 <sup>th</sup> Ed., Pearson Prentice Hall, 2005	<ul style="list-style-type: none"><li>• 5 minute checks</li><li>• check homework</li><li>• Quizzes</li><li>• Mid-Chapter Test</li><li>• Free-Response Chapter test</li><li>• Oral response</li><li>• Board work</li></ul>

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**Unit 2: Equations and Inequalities**

**9 Lessons**

**PC#4, PC#5**

<b>Objectives</b>	<b>Methods</b>	<b>Resources</b>	<b>Assessment</b>
The students will 1. Solve linear equations or equations that lead to linear equations. 2. Solve quadratic equations using factoring, completing the square, and quadratic formula. 3. Perform the four basic operations on complex numbers. 4. Solve quadratic equations in the complex number system. 5. Solve equations involving radicals. 6. Solve equations quadratic in form. 7. Solve higher degree polynomial equations by factoring. 8. Solve linear inequalities and express the answer in interval notation. 9. Solve equations and inequalities involving absolute value. 10. Solve applied problems.	<ul style="list-style-type: none"><li>• teacher lecture</li><li>• teacher working examples on the board</li><li>• teacher showing problems on overhead projector</li><li>• student guided practice of problems in book</li><li>• cooperative learning groups</li><li>• individual assistance</li><li>• partner work</li><li>• worksheets</li><li>• homework</li><li>• video</li><li>• internet websites</li></ul>	Algebra & Trigonometry; 7 <sup>th</sup> Ed., Pearson Prentice Hall, 2005	<ul style="list-style-type: none"><li>• 5 minute checks</li><li>• check homework</li><li>• Quizzes</li><li>• Mid-Chapter Test</li><li>• Free-Response Chapter test</li><li>• Oral response</li><li>• Board work</li></ul>

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**Unit 3: Graphs**

**9 Lessons**

**PC#2, PC#4**

<b>Objectives</b>	<b>Methods</b>	<b>Resources</b>	<b>Assessment</b>
<p>The students will</p> <ol style="list-style-type: none"> <li>1. Use the distance and midpoint formulas.</li> <li>2. Graph equations by plotting points.</li> <li>3. Find the intercepts of an equation.</li> <li>4. Determine whether the graph of an equation has symmetry.</li> <li>5. Find the slope of a line.</li> <li>6. Graph a line.</li> <li>7. Given sufficient information, find the equation of a line in slope-intercept and general form.</li> <li>8. Using the concept of slope, determine whether two lines are parallel, perpendicular, or neither.</li> <li>9. Given the equation of a line, find the equation of a line that is either parallel or perpendicular to the given line.</li> <li>10. Write the equation of a circle in standard form.</li> <li>11. Given an equation of a circle in general form, write it in standard form, find the center and radius, and graph the circle.</li> </ol>	<ul style="list-style-type: none"> <li>• teacher lecture</li> <li>• teacher working examples on the board</li> <li>• teacher showing problems on overhead projector</li> <li>• student guided practice of problems in book</li> <li>• cooperative learning groups</li> <li>• individual assistance</li> <li>• partner work</li> <li>• worksheets</li> <li>• homework</li> <li>• video</li> <li>• internet websites</li> </ul>	<p>Algebra &amp; Trigonometry; 7<sup>th</sup> Ed., Pearson Prentice Hall, 2005</p>	<ul style="list-style-type: none"> <li>• 5 minute checks</li> <li>• check homework</li> <li>• Quizzes</li> <li>• Mid-Chapter Test</li> <li>• Free-Response Chapter test</li> <li>• Oral response</li> <li>• Board work</li> </ul>

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**Unit 4: Functions and Their Graphs**

**9 Lessons**

**PC#1, PC#4**

<b>Objectives</b>	<b>Methods</b>	<b>Resources</b>	<b>Assessment</b>
<p>The students will</p> <ol style="list-style-type: none"> <li>1. Determine whether a relation determines a function.</li> <li>2. Evaluate a function.</li> <li>3. Find the domain of a function.</li> <li>4. Find the sum, difference, product, and quotient of two functions.</li> <li>5. Determine whether a particular graph represents a function.</li> <li>6. Obtain information such as domain, range, and intercepts from the graph of a function.</li> <li>7. Determine whether a function is even, odd, or neither from the equation and graph of the function.</li> <li>8. Determine from the graph of a function where it is increasing, decreasing or constant.</li> <li>9. Use the graph of a function to determine its local minimum and maximum values.</li> <li>10. Find the average rate of change of a function.</li> <li>11. Graph the functions in the library of functions which is a list of commonly encountered function.</li> <li>12. Be familiar with piecewise-defined functions.</li> <li>13. Graph functions using horizontal and vertical shifts, using compressions and stretches, and using reflections about the x-axis or y-axis.</li> </ol>	<ul style="list-style-type: none"> <li>• teacher lecture</li> <li>• teacher working examples on the board</li> <li>• teacher showing problems on overhead projector</li> <li>• student guided practice of problems in book</li> <li>• cooperative learning groups</li> <li>• individual assistance</li> <li>• partner work</li> <li>• worksheets</li> <li>• homework</li> <li>• video</li> <li>• internet websites</li> </ul>	<p>Algebra &amp; Trigonometry; 7<sup>th</sup> Ed., Pearson Prentice Hall, 2005</p>	<ul style="list-style-type: none"> <li>• 5 minute checks</li> <li>• check homework</li> <li>• Quizzes</li> <li>• Mid-Chapter Test</li> <li>• Free-Response Chapter test</li> <li>• Oral response</li> <li>• Board work</li> </ul>

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**Unit 5: Polynomial and Rational Inequalities**

**9 Lessons**

**PC#3, PC#4**

<b>Objectives</b>	<b>Methods</b>	<b>Resources</b>	<b>Assessment</b>
The students will 1. Find the domain and asymptotes of rational functions 2. Solve polynomial and rational inequalities	<ul style="list-style-type: none"><li>• teacher lecture</li><li>• teacher working examples on the board</li><li>• teacher showing problems on overhead projector</li><li>• student guided practice of problems in book</li><li>• cooperative learning groups</li><li>• individual assistance</li><li>• partner work</li><li>• worksheets</li><li>• homework</li><li>• video</li><li>• internet websites</li></ul>	Algebra & Trigonometry; 7 <sup>th</sup> Ed., Pearson Prentice Hall, 2005	<ul style="list-style-type: none"><li>• 5 minute checks</li><li>• check homework</li><li>• Quizzes</li><li>• Mid-Chapter Test</li><li>• Free-Response Chapter test</li><li>• Oral response</li><li>• Board work</li></ul>

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**Unit 6: Exponential and Logarithmic Functions**

**9 Lessons**

**PC#1, PC#4, PC#5**

<b>Objectives</b>	<b>Methods</b>	<b>Resources</b>	<b>Assessment</b>
<p>The students will</p> <ol style="list-style-type: none"> <li>1. Form a composite function and find its domain.</li> <li>2. Determine the inverse of a one-to-one function.</li> <li>3. Obtain the graph of the inverse function from the graph of the original function.</li> <li>4. Be familiar with exponential functions.</li> <li>5. Graph exponential functions.</li> <li>6. Solve exponential equations.</li> <li>7. Convert exponential expressions to logarithmic expressions and visa versa.</li> <li>8. Evaluate logarithmic functions.</li> <li>9. Determine the domain of a logarithmic function.</li> <li>10. Graph logarithmic functions.</li> <li>11. Solve logarithmic equations.</li> <li>12. Work with the properties of logarithms.</li> <li>13. Evaluate logarithms whose base is neither 10 nor e.</li> <li>14. Solve application problems involving either exponential or logarithmic functions.</li> </ol>	<ul style="list-style-type: none"> <li>• teacher lecture</li> <li>• teacher working examples on the board</li> <li>• teacher showing problems on overhead projector</li> <li>• student guided practice of problems in book</li> <li>• cooperative learning groups</li> <li>• individual assistance</li> <li>• partner work</li> <li>• worksheets</li> <li>• homework</li> <li>• video</li> <li>• internet websites</li> </ul>	<p>Algebra &amp; Trigonometry; 7<sup>th</sup> Ed., Pearson Prentice Hall, 2005</p>	<ul style="list-style-type: none"> <li>• 5 minute checks</li> <li>• check homework</li> <li>• Quizzes</li> <li>• Mid-Chapter Test</li> <li>• Free-Response Chapter test</li> <li>• Oral response</li> <li>• Board work</li> </ul>

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**Unit 7: Systems of Equations and Inequalities**

**9 Lessons**

**PC#3**

<b>Objectives</b>	<b>Methods</b>	<b>Resources</b>	<b>Assessment</b>
The students will 1. Solve a system of linear equations by substitution and elimination. 2. Solve a system of equations using matrices. 3. Evaluate 2 by 2 determinates. 4. Use Cramer's rule to solve a 2 by 2 system of linear equations. 5. Solve a system of nonlinear equations by substitution and elimination.	<ul style="list-style-type: none"><li>• teacher lecture</li><li>• teacher working examples on the board</li><li>• teacher showing problems on overhead projector</li><li>• student guided practice of problems in book</li><li>• cooperative learning groups</li><li>• individual assistance</li><li>• partner work</li><li>• worksheets</li><li>• homework</li><li>• video</li><li>• internet websites</li></ul>	Algebra & Trigonometry; 7 <sup>th</sup> Ed., Pearson Prentice Hall, 2005	<ul style="list-style-type: none"><li>• 5 minute checks</li><li>• check homework</li><li>• Quizzes</li><li>• Mid-Chapter Test</li><li>• Free-Response Chapter test</li><li>• Oral response</li><li>• Board work</li></ul>