

## First Semester Algebra 3 Final Blueprint

The first semester exam consists of 48 multiple-choice questions covering 12 topics. Each topic has four questions with three correct answers being necessary for mastery of the topic. The formula sheet to be used on the final will be available to students, graphing calculators will be allowed. No other materials may be used on this final.

| Chapter Headings                                 | Topic   | Standard | Question Numbers |
|--|---|----------|------------------|
| Chapter 1: Data and Linear Representations       | <ul style="list-style-type: none"> <li>Write, graph and solve linear equations and inequalities including: absolute value, Parallel lines equations, compound inequalities</li> </ul> | 4.12.5   | 1, 2, 3, 4       |
|  | <ul style="list-style-type: none"> <li>Direct, inverse and joint variations</li> </ul>  | 2.12.3a  | 5, 6, 7, 8       |
| Chapter 2: Numbers and Functions                 | <ul style="list-style-type: none"> <li>Evaluate expressions, determine: if a function, state Domain and Range</li> </ul>  | 2.12.6   | 9, 10, 11, 12    |
|  | <ul style="list-style-type: none"> <li>Perform basic operations <i>in/on</i> functions, find Composites, find Inverses of functions.</li> </ul>                                       | 2.12.5   | 13, 14, 15, 16   |
| Chapter 3: Systems of equations                  | <ul style="list-style-type: none"> <li>Solve Systems of Equations and Inequalities: one solution, no and all solutions and their graphs.</li> </ul>                                   | 2.12.7   | 17, 18, 19, 20   |
| Chapter 4: Matrices                              | <ul style="list-style-type: none"> <li>Perform simple operations on matrices: addition, subtraction and scalar and matrix multiplication, element names</li> </ul>                    | 1.12.5   | 21, 22, 23, 24   |
|  | <ul style="list-style-type: none"> <li>Problems using matrices including: inverse of a matrix, determinant of a matrix, solving systems of equations with three unknowns</li> </ul>   | 2.12.5   | 25, 26, 27, 29   |
| Chapter 5: Quadratic Functions                   | <ul style="list-style-type: none"> <li>Finding roots and the nature of roots in quadratic equations</li> </ul>  | 2.12.4   | 28, 30, 31, 32   |
|  | <ul style="list-style-type: none"> <li>Factor and use factoring to solve quadratic equations</li> </ul>   | 2.12.4   | 33, 34, 35, 36   |
|  | <ul style="list-style-type: none"> <li>Perform operations on complex numbers: simplifying, graphing</li> </ul>  | 2.12.4   | 37, 38, 39, 40   |
| Chapter 6: Exponential and Logarithmic Functions | <ul style="list-style-type: none"> <li>Write equivalent forms, simplify, evaluate and use properties of exponential and logarithmic equations.</li> </ul>                             | 1.12.2   | 41, 42, 43, 44   |
|  | <ul style="list-style-type: none"> <li>Use common logarithmic functions to solve exponential and logarithmic equations.</li> </ul>  | 2.12.5   | 45, 46, 47, 48   |

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Subjects to be covered by Teacher Tests could include:

- Graphing Absolute Value
- Introduction questions to Linear Programming
- Exponential Growth and Decay
- Calculating growth of Investments
- Modeling practical problems using Matrices
- Practical applications (Word Problems) for all areas of assessment.