**Math 20-1 Chapter 8 Systems of Equations Review**

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| **Key Ideas** | **Description or Example** |
| Determining the solution of a system of linear- quadratic equations graphically. | Isolate the *y* variable for each function equation.  Graph the line and the parabola on the same grid.  The solutions are the points of intersection of the graph, (*x*, *y*).  The ordered pair satisfies both equations.  Verify your solutions in the original function equations. |
| There are three possibilities for the number of intersection and the number of solutions of a system of linear-quadratic equations. |  |
| Determining the solution of a system of quadratic-quadratic equations graphically | Isolate the *y* variable for each function equation.  Graph both parabolas on the same grid.  The solutions of a quadratic-quadratic equation are the points of intersection of the two graphs, (*x*, *y*).  Verify the solutions in the original form of the equations. |
| There are three possibilities for the number of intersections and the number of solutions of a system of quadratic-quadratic equations.  If one quadratic is a multiple of another, there will be an infinite number of solutions. |  |
| Determining the solution of a system of linear-quadratic equations **algebraically.**  Two Methods to choose from  **Substitution or Elimination** | Linear Quadratic Systems |
| Determine the solution to a system of quadratic-quadratic equations **algebraically**.  You can use Substitution or Elimination. |  |

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| **Vocabulary** | **Definition** |
| System of linear-quadratic equations | A linear equation and a quadratic equation involving the same variables. A graph of the system involves a line and a parabola. |
| System of quadratic-quadratic equations | Two quadratic equations involving the same variables. The graph involves two parabolas. |
| Solution | With a system of equations or system of inequalities, the solution set is theset containing value(s) of the variable(s) that satisfy all equations and/or inequalities in the system. All the points of intersection of the two graphs. The ordered pairs (x, y) that the two function equations have in common. |
| Method of substitution | An algebraic method of solving a system of equations. Solve one equation for one variable. Then, substitute that value into the other equation and solve for the other variable. |
| Method of elimination | An algebraic method of solving a system of equations. Add or subtract the equations to eliminate one variable and solve for the other variable. |

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| **Common Errors** | **Description** |
| Isolating a variable | Making errors with signs when isolating a variable. |
| Subtraction | Only subtracting the first term when eliminating and adding the other terms. |
| Not checking solutions properly. | After obtaining your solutions to a quadratic-quadratic or linear-quadratic equation not substituting your solution for x and y to verify your answer. |