Review Sheet for Algebra 1 Exam

St. Mary's Academy

*The Algebra 1 exam is for students who think they should take Accelerated Algebra or Geometry when they arrive at SMA. If you know that Algebra 1 should be your next class, you do not need to take this test. Please contact the Registrar at SMA if this is the case to request opting out of the algebra 1 placement test.*

*The following topics will be tested. All topics can be found in any standard Algebra textbook.*

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| **General Topic** | **Specific skills** |
| Simplifying expressions with and without variables. | Order of operations  Addition and subtraction of signed numbers  Using the distributive property  Combining like terms  Multiplying and dividing signed numbers  Multiplying a monomial and a polynomial  Multiplying two binomials  Multiplying a binomial and a trinomial  Expressions with Absolute value |
| Area and Perimeter | Solving a problem given area and/or perimeter of an object. |
| Solving Linear Equations. | Solving equations with variables on one side  Solving equations with variables on both sides  Solving equations involving parentheses  Solving equations involving like terms.  Writing and Solving proportional equations. |
| Graphing on the coordinate plane | Graphing Ordered pairs  Graphing Linear equations from:   * a table of values * an equation with slope and y-intercept |
| Working with Linear functions | Rates of change and slope  Identify a graph, table, or word problem as linear or non-linear  Identify slope & y-intercept from a graph or word problem  Write equation of a line given:   * slope and y-intercept * 2 points on the line * slope and one point on the line * standard form of a line * a situation that follows a linear pattern * a table that follows a linear pattern |
| Solving Linear Inequalities | Same skills as listed under "solving linear eqns", but with inequalities |
| Solving Systems of Equations | Using substitution  Using the addition/subtraction (elimination) method  By graphing  Writing a system and solving from a word problem |
| Graphing linear inequalities | Graphing solutions to an inequality on a number line  Graphing solutions to a two-variable inequality on a graph |
| Patterns | Observing and representing patterns using math. |
| Function Notation | Understanding and using f(x) notation. |
| Quadratic Functions | Drawing a quadratic function from a table of values  Solving a quadratic by using the Quadratic Formula (will be provided).  Solving a quadratic by factoring and/or the zero product property. |
| Factoring methods | Factoring out a common monomial factor  Factoring a trinomial expression  Factoring a difference of two perfect squares |
| Exponential Functions | Sketching an exponential function based on an equation  Using the initial value and growth factor to write an equation. |
| Simplifying exponential expressions. | Multiplying and dividing exponential expressions.  Simplifying expressions with negative exponents  Powers of exponential expressions. |