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 operationsAddition and subtraction of signed numbersUsing the distributive propertyCombining like termsMultiplying and dividing signed numbersMultiplying a monomial and a polynomialMultiplying two binomialsMultiplying a binomial and a trinomialExpressions 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 sideSolving equations with variables on both sidesSolving equations involving parenthesesSolving equations involving like terms.Writing and Solving proportional equations. |
| Graphing on the coordinate plane | Graphing Ordered pairsGraphing Linear equations from:* a table of values
* an equation with slope and y-intercept
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| Working with Linear functions | Rates of change and slopeIdentify a graph, table, or word problem as linear or non-linearIdentify slope & y-intercept from a graph or word problemWrite 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
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| Solving Linear Inequalities | Same skills as listed under "solving linear eqns", but with inequalities |
| Solving Systems of Equations  | Using substitutionUsing the addition/subtraction (elimination) methodBy graphingWriting a system and solving from a word problem |
| Graphing linear inequalities | Graphing solutions to an inequality on a number lineGraphing 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 valuesSolving 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 factorFactoring a trinomial expressionFactoring a difference of two perfect squares |
| Exponential Functions | Sketching an exponential function based on an equationUsing the initial value and growth factor to write an equation. |
| Simplifying exponential expressions. | Multiplying and dividing exponential expressions.Simplifying expressions with negative exponentsPowers of exponential expressions. |