**NUTS & BOLTS - ALGEBRA 1**

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| **THE BASICS UNIT** |
| * When **Solving an Equation**, your goal is to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * To get rid of a fraction when it is directly next to a variable,   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * The coefficient of the first term in a polynomial in standard form is called the   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * The **DEGREE** of a polynomial is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * STUDY YOUR PROPERTIES on note sheet **BASICS-5**. * **IRRATIONAL NUMBERS*****cannot*** be made into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * When using **Interval Notation**, Square Brackets mean \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and Parentheses mean \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * When **Simplifying a Radical**, put the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the first branch! * When working with **Dimensional Analysis**, start with   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_! |

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| **UNIT 1** |
| * Sum, Exceeds, More than, Increased by: * Difference, Less than, Fewer than, Decreased by, Reduced by: * Product, Of: * Quotient: * Be careful when translating ***less than, fewer than, subtracted from***: * Is means \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * What does an equation have that an expression does not have? * To **Add** Polynomials: * To **Subtract** Polynomials: * To **Multiply** Polynomials: * To **Divide** Polynomials: * An equation that contains more than one variable is called a   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * When solving, get rid of squaring with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * In a comparison word problem, always let *x* be whatever is \_\_\_\_\_\_\_\_\_\_\_\_\_ in the comparison sentence! * In word problems, always ask yourself     \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_?   * In word problems, be sure to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_! * Don’t forget that coins have different \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Incorporate these into your equation. * Consecutive integers go up by \_\_\_\_\_\_\_\_\_\_\_. * Consecutive even integers go up by \_\_\_\_\_\_\_\_\_\_. * Consecutive odd integers go up by \_\_\_\_\_\_\_\_\_\_\_\_. |

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| **UNIT 2** |
| * The first method of **FACTORING** to look for is \_\_\_\_\_\_\_\_\_\_\_\_\_\_. * To find GCF on the calculator, press \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * The *Difference of Two Square*s is referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * To factor a trinomial with a lead coefficient of 1, use \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * To factor a trinomial with a lead coefficient other than 1, use   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ also called  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * You may also be asked to factor using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * **FACTOR COMPLETELY** means \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |

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| **UNIT 3** |
| * **Rate of Change** = * The *rate of change* of a line can also be called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * The general form for an equation of a line is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * **Domain**: * **Range**: * A **Function** passes the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * A **One-to-One Function** passes the \_\_\_\_\_\_\_\_\_\_\_\_\_ and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_. * *f(x)=* is the same as \_\_\_\_\_\_\_\_\_\_\_\_\_\_. * To solve a **Linear System of Equations** graphically, graph each line and state   the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |

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| **UNIT 4** |
| * To evaluate **Function Notation**, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_! * A **Function** has no repeated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * A **One-to-One Function** has no repeated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * To find the ***x*-intercept** algebraically, plug in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * To find the ***y*-intercept** algebraically, plug in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * To solve a **Linear System of Equations** algebraically, use \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   Remember, you must have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_! |

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| **UNIT 5** |
| * **At least** means * **At most** means * When **Solving an Inequality**, if you multiply or divide by a negative, you must   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * When **Graphing an Inequality**, you must decide on a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   and you must \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * Make a dotted boundary for the symbols: * Make a solid boundary for the symbols: * Shade the half-plane above the line for the symbols: * Shade the half-plane below the line for the symbols: * When graphing a **System of Inequalities**, put an \_\_\_\_\_\_\_\_\_where the shading overlaps. |

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| **UNIT 6** |
| * **Quadratic Equations** have an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * Solving Quadratics Methods: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * When using **Inspection**, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the squared term and then   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ both sides. (Sometimes, you may have to use  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ first!)   * When using **T-Bar**, get the equation \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and   then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * Use the **Quadratic Formula** as a last resort! (on the reference sheet) |

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| **UNIT 7** |
| * When you **Graph a Quadratic**, the shape is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * The highest spot on a parabola is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and the   lowest spot is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * The **VERTEX** can also be called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * The line drawn through the vertex is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * Values the graph crosses the *x*-axis are called the \_\_\_\_\_\_\_\_\_\_ or the \_\_\_\_\_\_\_\_\_\_. * A **Quadratic-Linear System of Equations** consists of a   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * A function that is symmetric about the *y*-axis is \_\_\_\_\_\_\_\_\_\_\_\_\_ and a function   that is symmetric about the origin (upside down test) is called \_\_\_\_\_\_\_\_\_\_\_\_\_. |
| **UNIT 8** |
| * The standard form for a quadratic is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * The vertex form for a quadratic is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * To change a quadratic from standard form to vertex form, you use   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * The formula for the **AXIS OF SYMMETRY** is: * When you solve a quadratic, the solutions are called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_or   the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. To find the zeros, replace *f(x)* with \_\_\_\_\_\_\_\_\_\_!   * To solve a **Quadratic-Linear System of Equations** algebraically, set the   equations \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |

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| **UNIT 9** |
| * The standard form of an **Exponential** is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * In the equation, *a* represents the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, *b* represents   the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and *x* represents \_\_\_\_\_\_\_\_\_\_\_.   * If the exponential is increasing, it represents \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * If the exponential is decreasing, it represents \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * The rate of change for an exponential will have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |

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| **UNIT 10** |
| * You should be able to graph **SQUARE ROOT**, **CUBIC**, **CUBE ROOT**, **ABSOLUTE VALUE**, and **PIECEWISE** functions. * If a sequence has a *common difference*, it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * If a sequence has a *common ratio*, it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * To find the *n*th term of a sequence, use the formula on the reference sheet! * In a recursive formula, block out the notation and find the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * To write an explicit formula, use the reference sheet formula and plug in   everything except \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , then \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * When *f(x)* is transformed into *f(x) + k*, this is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * When *f(x)* is transformed into *f(x+k)*, this is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * When *f(x)* is transformed into *–f(x)*, this is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * When *f(x)* is transformed into *f(-x)*, this is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * When *f(x)* is transformed into  and , the graph gets \_\_\_\_\_\_\_\_\_\_\_\_\_\_. * When *f(x)* is transformed into  and , the graph gets \_\_\_\_\_\_\_\_\_\_\_. |

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| **UNIT 11** |
| * You should know these statistical graphs: **HISTOGRAM, DOT PLOT**, **BOX PLOT**, **TWO-WAY FREQUENCY TABLE**, and **SCATTER PLOT**. * The **Mean** is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and is represented by \_\_\_\_\_\_\_\_\_\_\_\_. * The **Median** is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * The **Mode** is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * The **Range** is the difference between the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_. * The **Interquartile Range** (IQR) is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * **Standard Deviation** is represented by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * The variable on the *x*-axis is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ variable   and the variable on the *y*-axis is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_variable.   * The **Line of Best Fit** can also be called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. * When the calculator gives you the equation for the line or curve of best fit,   you are performing a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * The **Correlation Coefficient** is represented by \_\_\_\_\_\_\_\_\_\_\_\_\_\_. All correlation   coefficients must be between \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. To find the  correlation coefficient on the calculator, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * When a change in one variable produces a change in the other, the variables   are said to have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ relationship.   * To find a residual: * In a residual plot, a line is the best fit if the points are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   A line is not the best fit if the points \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  The closer the residual plots are to the *x*-axis, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |