Algebra Final Information Sheet **Name:_____**

Unit 1 – Expressions and Equations

Inequalities → $\leq or \geq$: Closed Circle $< or >$: Open Circle

Remember: multiplying or dividing by a negative number, FLIP the inequality!

Compound Inequalities → AND is the intersection; overlap of two inequalities, both stand true

OR is the union; stands true for one or both inequalities

Absolute Value Inequalities → $< or \leq$: AND statement $> or \geq$: OR statement $=$: graph two points

Unit 2 – Exponents and Polynomials

Click here the link on webpage for exponent rules

Degree of Polynomial → determine the degree of each term separately; highest degree wins!

Operations with Polynomials → Adding/Subtracting: Combine like terms

Multiplying: Multiple each term in the first polynomial by every term in the second (FOIL, special products, etc.)

Unit 3 – Functions

Types of Functions → Linear, Quadratic, Exponential, Square Root, Absolute Value

Transformations

Vertical Transformations of y = f(x)			Horizontal Transformations of y = f(x)		
y = f(x) + k	⇨	UP	y = f(x – h)	⇨	RIGHT
y = f(x) – k	⇨	DOWN	y = f(x + h)	⇨	LEFT

Domain & Range: Parentheses ( ) are not inclusive or do not include value

Brackets [ ] are inclusive or include the value

Unit 4 – Equations of Lines

Slope → $\frac{rise}{run}$ and $\frac{y_2-y_1}{x_2-x_1}$

Point Slope Form → $y - y_1 = m(x - x_1)$

Slope Intercept Form → $y = mx + b$

Direct Variation → $y = mx$ …… Remember, equations have an x and y!

Graphing lines → Use slope intercept form or graph using intercepts

Inequalities → $\leq or \geq$: Solid Line $< or >$: Dashed line *Be sure to shade a region!

Piecewise Functions → No function should overlap on either side of the boundary

Unit 5 – Systems of Equations and Inequalities

Solutions → Remember, there are three possible types of solutions.

Matrices → ROWS BY COLUMNS

Adding/Subtracting: Dimensions must match

Multiplying: Inner dimensions have to match, out dimensions become dimensions of solution

Unit 6 – Exponential

Arithmetic Sequences

Explicit: $a_n = a_1 + (n-1)(d)$

Recursive: $a_1 = \#$

$a_n = a_{n-1} + d$

Geometric Sequences

Explicit: $a_n = a_1 \cdot r^{n-1}$

Recursive: $a_1 = \#$

$a_n = a_{n-1} \cdot r$

Exponential Growth

$y = a(1+r)^t$

Exponential Decay

$y = a(1-r)^t$

Simple Interest

$I = prt$

Compound Interest

$y = a\left(1 + \frac{r}{n}\right)^{n \cdot t}$

Half Life

$y = a(0.5)^t$

Unit 7 – Statistics

Open your binder and use your notes → you should not forget this unit in a week ;)

Khan Academy is a great resource if you need a quick refresher on a concept!