



**** Algebra II w/Statistics Semester 1****

| Timeline | Unit/theme | Standard | Student Focused Objective | Resources/ Suggested Activities |
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| 1 week | All Things Algebra Unit 1: Equations & Inequalities | Algebra 1 Review - Real Number System Order of Operations Evaluating Simplifying Expressions | <ul style="list-style-type: none"> I can classify numbers in the real number system. I can use order of operations. I can evaluate and simplify expressions. | Misc. web sites and various worksheets. |
| 3 wks | | 8. Explain why extraneous solutions to an equation may arise and how to check to be sure that a candidate solution satisfies an equation. Extend to radical equations. | <ul style="list-style-type: none"> I can solve multi-step equations and inequalities. I can solve literal equations. I can solve absolute value equations and inequalities. | Misc. web sites and various worksheets. |
| 5 wks | | 10. Create equations and inequalities in one variable and use them to solve problems. Extend to equations arising from | <ul style="list-style-type: none"> I can write and solve equations from word problems. I can perform basic operations on polynomials by adding and subtracting. I can perform basic operations on | Misc. web sites and various worksheets. |

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| | | <p>polynomial, trigonometric (sine and cosine), logarithmic, radical, and general piecewise functions. 22. Use the mathematical modeling cycle to solve real world problems involving polynomial, trigonometric (sine and cosine), logarithmic, radical, and general piecewise functions, from the simplification of the problem through the solving of the simplified problem, the interpretation of its solution, and the checking of the solution's feasibility</p> | <p>polynomials by multiplying and dividing.</p> | |
| 5 wks | | <p>6. Factor polynomials using common factoring techniques, and use the factored form of a polynomial to reveal the zeros of the function it defines. 7. Prove polynomial identities and use them to describe numerical relationships. Example: The polynomial identity $1 - x^n = (1 - x)(1 + x + x^2 + \dots + x^{n-1})$</p> | <ul style="list-style-type: none"> • I can factor expressions using greatest common factor, factor by grouping and differences of squares • I can factor trinomials when $a=1$ and when a is not equal to 1. • I can solve quadratics by factoring. • I can factor trinomials using the sum and difference of perfect cubes. • I can factor trinomials with multiple variables | <p>Misc. web sites and various worksheets.</p> |

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| | | $+ x + x^2 + x^3 + \dots + x^{n-1} + x^n$) can be used to find the sum of the first n terms of a geometric sequence with common ratio x by dividing both sides of the identity by $(1 - x)$. | | |
| 1 week | | 14. Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$. a. Find the approximate solutions of an equation graphically, using tables of values, or finding successive approximations, using technology where appropriate. Extend to cases where $f(x)$ and/or $g(x)$ are polynomial , trigonometric (sine and cosine), logarithmic, radical, and general piecewise functions. | <ul style="list-style-type: none"> I can solve quadratics by graphing | Misc. web sites and various worksheets. |
| 3 wks | | 20. Graph functions expressed symbolically and show key features of | <ul style="list-style-type: none"> I can graph linear equations and inequalities. I can write the equation of a line given a point and a slope, two points and a graph. | Misc. web sites and various worksheets. |

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| | | <p>the graph, by hand in simple cases and using technology for more complicated cases. Extend to polynomial, trigonometric (sine and cosine), logarithmic, reciprocal, radical, and general piecewise functions.</p> | <ul style="list-style-type: none">• I can determine if lines are parallel or perpendicular given their equations. | |
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