

STUDY TOPICS – ALGEBRA 2 FINAL – FALL

- Write an equation for compound interest and evaluate
- Sketch a real world situation modeled by a parabola and write the equation being sure to find "a" $y = a(x - h)^2 + k$. Hint: Remember the rabbit jumping over the fence.
- Identify geometric and arithmetic sequences and write the explicit formulas
- Write an equation for a real world exponential growth situation.
- Simplify fractional exponents (Ex: $m^{\frac{1}{4}} n^{\frac{3}{4}}$)
- Identify what is / is not a function from a graph (ex: use vertical line test)
- Solve quadratic equations. Identify number of x-intercepts / solutions.
- Write and solve systems of equations by substitution, elimination and graphing
- Simplify radical expressions (Ex: $6\sqrt{12} + 2\sqrt{27}$)
- Know how to find x and y intercepts
- Know how to find slope from an equation using the slope formula
- Completely factor (know difference of perfect squares; GCF etc.)
- Identify domain and range from ordered pairs or graphs
- Know the vertex form of a parabola ($y = a(x - h)^2 + k$) and identify the vertex, x and y intercepts and the axis of symmetry
- Identify vertex form of an absolute value function and its graph ($y = a|x - h| + k$)
- Calculate terms of a sequence
- Evaluate expressions and functions for a given value
- Find the maximum value of a situation by identifying the vertex of a parabolic equation (hint: use $x = -b/2a$). Ex: $P = -3t^2 + 100t - 250$ where $t =$ time and $P =$ Profit. Find where t is the maximum to give the most profit P .
- Solve absolute value equations Ex: $2|4x - 5| - 2 = 6$
- Write the vertex form of a quadratic equation by completing the square
- Identify where the domain of a rational expression is restricted (excluded value/"hole")
- Identify the graph of an exponential function. Know the difference between growth and decay
- Add and subtract rational expressions. Know how to find a common denominator.
- Multiply and divide rational expressions
- From a parent function know how to write the equation to translate left/right or up/down
- Know the point-slope form of a linear equation
- Know how to graph a linear equation
- Find the inverse of a function algebraically and use proper inverse notation ($f^{-1}(x)$)