

Things you need to memorize for the Algebra Competency Exam

1. know independent and dependent variable and which axis goes with which one.
2. Average growth rate= change in function/ change in independent variable
3. Percentage change= change in function/previous function value times 100%
4. Know how a t-chart works with the rule. Given an x-value/ y-value and you find out the rule complete the t-chart.
5. Know how to draw a bar graph
6. Interpolation and Extrapolation Formula

Take the average growth rate and multiply it by the number of increments in the independent variable and add the result to the function value p. 86 in book.

7. Know how to enter data on your graphing calculator to get a scatterplot and then obtain a line.
8. Know formula for line and its meaning $y = \text{growth rate times } x + \text{initial value}$
 $Y = mx + b$

Know the formula for slope $\text{change in } y \text{ value} / \text{change in } x \text{ values}$

9. Know the formula for exponential growth
Amount = Initial value times $(1 + r)^t$
10. Know the formula for Exponential decay
Amount = Initial value times $(1 - r)^t$
11. Know the half life formula
Amount remaining= Initial times $(1/2)^h$
h - found by taking how long they give you in the problem divided by the actual half-life
12. Earthquake formula $\text{Magnitude} = \log(\text{Relative intensity}),$
 $\text{Relative intensity} = 10^{\text{Magnitude}}$
13. May have to know how to use logs. Take the logs of both side of an equation.
And using the log formula $\log(A^t) = t \log(A)$
14. Doubling time = $\log 2 / \log(\text{Base})$
15. Know the quadratic formula
16. Know the vertex formula and be clear about what the vertex means.

