

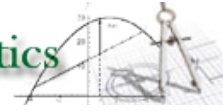
Need to know from MAC1114 Trigonometry/MAC1140 PreCalculus Algebra (or MAC1147 PreCal Trig)

*Everything I needed to know when I walked into Calculus but didn't really want to remember (Guess what? You have to know it, whether you like it or not)*

1. Definition of functions; use of function notation like breathing [you have to own it sooner or later; shoot for sooner (real soon)]
2. Composition/decomposition of functions – this skill will come in very handy as we progress through derivatives
3. Absolute value, the formal definition and it's meaning:

$$|a| = \begin{cases} a, & a \geq 0 \\ -a, & a < 0 \end{cases}$$

4. Solve polynomial, rational functions, etc.
5. Graph sketching- you must be capable of sketching graphs of functions and relations; shape recognition, etc. This enables you to utilize your graphing calculator as a tool to enhance your understanding of concepts.
6. Recognition of translations/rotations/symmetry of functions, even/odd – both how these concepts impact the function and its associated graph
7. Families of functions – again shape recognition, you must be past the need to plot half a dozen points to get the gist of the shape of basic functions
8. Simplify the Difference Quotient of a given function
9. Inverse functions
10. Exponential & logarithmic functions



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11. Parametric functions

12. Trigonometric identities – you must own these; failure to know the identities will cause you difficulty in Calculus I; IF you make it through Cal I and still don't own them, you WILL crash & burn and die a most horrible, pain-filled bloody death in Cal II. Please don't think I am joking or over exaggerating.

13. Algebraic basics you MUST know now:

a. Distance formula  $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

b. Circle, standard form  $(x - h)^2 + (y - k)^2 = r^2$

c. Lines

i. Slope  $m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}, x_1 \neq x_2$

ii. Point-slope  $y - y_1 = m(x - x_1)$

iii. Slope-intercept  $y = mx + b$