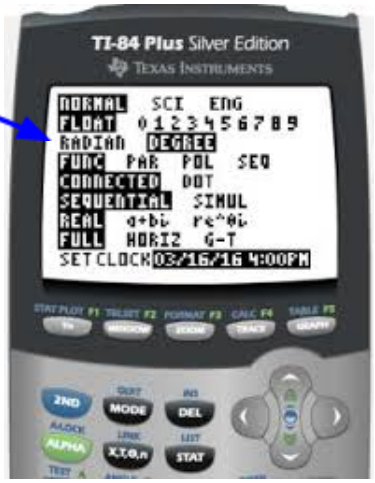
Using a calculator to evaluate trig functions:

We used a unit circle to find values of the trigonometric functions at $\frac{\pi}{4}$. These are exact values. We can find approximate values of the trigonometric functions using a calculator.

1. The first step is to make sure your calculator is in the correct *mode*, degrees or radians depending upon the question.



2. Most calculators have keys marked SIN, COS, and TAN. For example, to find the value of sin 1.2, set the calculator to radian mode and enter 1.2 SIN.

3. To evaluate cosecant, secant, and cotangent functions, press 

(2nd) and then the respective reciprocal function, to obtain $\sin^{-1}$, $\cos^{-1}$, and $\tan^{-1}$. We know this because the negative exponent property has you take the reciprocal value of a function.

Don't forget we can also find solutions to trigonometric functions by entering the function in the y = and analyzing the graph or table of values.

APPLICATION/PRACTICE:

1. Use the calculator to find the value to four decimal places.
   (a) $\cos \frac{\pi}{4}$ (b) $\cot 1.2$

2. The number of hours of daylight, H, on day t of any given year (on January 1, t = 1) in Fairbanks, Alaska, can be modeled by the function $H(t) = 12 + 8.3 \sin\left[\frac{2\pi}{365}(t - 80)\right]$. March 21, the 80th day of the year, is the spring equinox. Find the number of hours of daylight in Fairbanks on this day.

3. The height of water, H, in feet, at a boat dock t hours after 6 AM is given by $H = 10 + 4 \sin \frac{\pi}{6}t$. When is low tide and when is high tide?