

Pre-Calculus – Graphing Sine & Cosine Functions (14.1 & 14.2)

Components for Mastery

I can . . .

- * Utilize my notes and homework to create a strong summary sheet that answers the questions below to review for my upcoming quiz and final exam.
- * Explain how to calculate the period of sine and cosine functions including an example for each (both sine and cosine) that are not 2π
- * Explain how to identify and graph amplitude of sine and cosine functions including where it is found in the $f(x) = a \sin(x - h) + k$ format
- * Explain how to calculate/identify the 5 critical values of one cycle of a sine function and how each is shown on a graph (period, amplitude, intercepts/zeros, all max and all min)
- * Explain how to graph sine functions utilizing the 5 critical values from the above example including examples that have a period $>$ than 2π and a different example that is $<$ 2π
- * Explain how to calculate the 5 critical values of one cycle of a cosine function and how each is shown on a graph (period, amplitude, intercepts/zeros, all max, and all min)
- * Explain how to graph cosine functions utilizing the 5 critical values from the above example including examples that have a period $>$ than 2π and a different example that is $<$ 2π
- * Explain how to graph sine and cosine functions over one cycle where the midline is above the x-axis and a different example where the midline is below the x-axis (vertical shift)

- * Explain how to identify and graph sine functions with a horizontal shift left or right including examples where the shift is $\pi/2$
- * Explain how to identify and graph cosine functions with a horizontal shift left or right including examples where the shift is $3\pi/2$
- * Explain how to identify and graph sine and cosine functions that are reflected across the midline of the function

Work Area Demonstrating the Components Listed