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| **OBJECTIVES:**   * Be able to graph the sine and cosine functions in both radians and degrees, using The Five Point Method. * Note that the ranges of both ***y = sin x*** and ***y = cos x*** will be **y**-values between -1 and 1. * Understand that the term ***sinusoid*** refers to both the sine and the cosine functions. * Be able to model periodic behavior with sinusoids.   **TUESDAY (11.19.24)**  **Discussion of the previously assigned work:**   * Page 351 (#68). Follow the directions and, also, graph one period of this function, using The Five Point Method. * Page 351 (#72, 73, 76)   **NEW OBJECTIVES:**  **CHAPTER 4, Section 5 (Pages 354, 355)**   * Graph one period of ***y = tan (x)*** and ***y = - tan (x).*** * Graph one period of ***y = atan (b(x – s)) + v.*** * Know why a tangent curve has **no** amplitude. * Find the **inflection point** of a tangent curve. * Locate the **asymptotes**.  |  | | --- | | **Discuss** the graphs of ***y = tan (x)*** and ***y = - tan (x).*** |  |  |  | | --- | --- | | **Model:** | **f(x) = y = atan (b(x-s)) + v** | | **Example:** | **f(x) = y = 2tan (10(x-20)) o + 4** |   Note: Unlike the sine and cosine functions, the tangent function has no amplitude. Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_   * **Amplitude** = NONE   For **a>0**, the curve will look like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  For **a‹0**, the curve will look like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   * **Period** = 180o/b or π/b = * **Interval Length** = Period/2 = * **Phase Shift** = s = * **Vertical Shift** = v = * ***TABLE OF VALUES TO PLOT***  |  |  | | --- | --- | | **X** | **y** | | **s – interval length** = |  | | **s =** | **v =** | | **s + interval length =** |  |   Fill in x-values now; fill in y-values later.   * ***2ND Window (TI-84)***   **TBL START** = s – interval length =  **∆ TBL** = interval length =   * ***Type in y = tangent function on TI-84.*** * ***2nd Graph on TI-84 :*** Use your calculator table to fill in the y-values in the above table. * **Note: This method will graph one period of your tangent function. The 2 asymptotes will occur for those x-values for which there are *error* messages in the corresponding y-values in the *TI-83/84* table.** * **Draw your graph below. Note that (s, v) is the inflection point.**   ***HOMEWORK*:**  **Graph the one period for each of the following functions, using formats discussed in class.**  (1) y = 4tan (5(x + 30)) o – 2  (2) y = -2tan (0.2(x – 40)) o + 3  **Class Work:** Graph one period of a given cosine function whose domain is in radians, using The Five Point Method. State the amplitude, period, phase shift, and vertical shift. Label the tick marks on the x and y axes. Label your five plotted points with their corresponding ordered pairs. Your work is due at the beginning of class on Thursday.  **THURSDAY (11.21.24)**  **Turn in the previously assigned class work, the graph of a given cosine function.**  **Homework-Check and discussion of the previously assigned homework.**  **Class Work/Homework: Review for a Quiz** **(Graphing the Sine, Cosine, Tangent Functions**) that you will be taking on Tuesday, 11.26.24.  **FRIDAY (11.22.24)**  **Discuss the Quiz Review.**  **Homework: Study for the Quiz (Graphing the Sine, Cosine, and Tangent Functions)** to be taken on Tuesday, 11.26.24. You may use notes on 2 sheets of paper (8.5 by 11 inches), front and back. | |
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