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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**.

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| **Discuss** the graphs of ***y = tan (x)*** and ***y = - tan (x).*** |

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| **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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