

In order to help you understand the in-class lessons, you need to read the text BEFORE class. This pre-reading guide is designed to help you read and identify the information. **\*\*NOTE\*\*** You may have to research some of the information if you do not remember it from last year. Use a Google search or check out [www.purplemath.com](http://www.purplemath.com) for background information.

The gold box on page 330 gives the characteristics of the sine function  $f(\theta) = \sin \theta$ . How did the graph come to be? Meaning, where did the ordered pairs that generate the sine curve come from? \_\_\_\_\_

\_\_\_\_\_

On page 330, the text says  $f(\theta) = \sin \theta$  is periodic. What does it mean if something is *periodic*? \_\_\_\_\_

\_\_\_\_\_

Why is the period of the sine function  $2\pi$ ? \_\_\_\_\_

\_\_\_\_\_

How is the cosine function different from the sine function? \_\_\_\_\_

\_\_\_\_\_

Why the cosine function different from the sine function? \_\_\_\_\_

\_\_\_\_\_

Define *sinusoid*: \_\_\_\_\_

\_\_\_\_\_

What is the general formula for a sinusoidal function (identify the meaning of letters  $a$ ,  $b$ ,  $c$ )? \_\_\_\_\_

\_\_\_\_\_

On page 332, the text says, "...the graphs of  $y = \sin x$  &  $y = \cos x$  can be obtained from the other by a horizontal translation of  $\dots \frac{\pi}{2}$ ." Why is this true? \_\_\_\_\_

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What is *amplitude*? \_\_\_\_\_

How is amplitude notated? \_\_\_\_\_

According to the blue box on page 353, what is the definition of *period*? \_\_\_\_\_

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How do you find the period of a general sinusoidal function?

Define *frequency* (use the blue box on pg. 353 and the sentence preceding the blue box): \_\_\_\_\_

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What is a *phase shift*? \_\_\_\_\_

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Which letters are associated with a phase shift (use pg. 353 and 354 to help answer this): \_\_\_\_\_

Why does the text connect sinusoids with electrical engineering on the bottom of pg. 353? \_\_\_\_\_

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What do the letters  $d$  (or  $k$ ) represent? \_\_\_\_\_

#### 4.4 Pre-reading Guide

Name: \_\_\_\_\_

Copy the blue box on pg. 354 here: