Trigonometry Project Assigned \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Due \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Now that we have finished Chapter 4 (Whew!!), I want to see what you learned. This project consists of two parts. You have approximately three weeks to complete the project. No class time will be given. *This project will count as a 50 point test grade.*

1. **Individual Portion:** Write a one page paper (typed, double spaced, 12 font) that defines trigonometry and gives a brief history of its origin. Please use the PEAR model and cite your sources. *This portion of the project will count 20 points.*
2. **Partner Portion:** Produce a PowerPoint presentation demonstrating your knowledge of the concepts we have learned so far this semester. Each presentation must contain 1) a title page 2) at least one slide from each of the categories listed below and 3) a summary of what you most enjoyed learning in this chapter. You and your partner will each earn the same grade. Be creative and have some fun with it! The cover is worth up to 2 points and the individual summary is worth 1 point. The other three categories apply to each of the other slides in the PowerPoint for a maximum score of 9 points per slide. *This portion of the project will count 30 points.*

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| **Trigonometry PowerPoint Project Grading Rubric** |  |
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| **Category** | **3** | **2** | **1** |
| Cover(2pts)Summary(1 pt) | Attractive and complete. | Somewhat attractive and complete. | Unattractive and incomplete. |
| Background | Explanation includes details and is clear. | Explanation has few details and/or is somewhat clear. | Explanation has no details and/or is unclear. |
| Mathematical Vocabulary/Content | Correct mathematical content and vocabulary is always used. | Correct mathematical content and/or vocabulary is generally used. | Correct mathematical content and/or vocabulary is rarely used. |
| Neatness/Organization | Examples are presented in a neat, clear, organized fashion that are correct and easy to follow and understand. | Examples are presented in a relatively neat, clear, and organized fashion that are mostly correct, generally easy to follow and/or understand. | Examples lack neatness and organization and are incorrect, are difficult to follow and/or understand. |

The PowerPoint portion must be emailed to me by midnight on the due date. Late fees (50% deduction per day) will apply. You must also turn in a hard copy of the paper and the PowerPoint in class on the due date.

Category 1:

1. Define positive and negative co-terminal angles. Give examples finding both positive and negative co-terminal angles using both degrees and radians. (a total of 4 examples).
2. Define complementary and supplementary angles. Describe a situation where there is no complement to a given angle. Give examples finding the complement and supplement of an angle using degrees and radians. (a total of 4 examples).
3. Describe the process of converting radian measures (in terms of π) to degrees and converting degree measurements to radians (in terms of π). Give two examples of each situation, two from the common angles on the unit circle and two uncommon angles.

Category 2:

1. Define arc length and describe how to find it. Examples should include those with an angle in radians, one angle in degrees, and finding a missing value (radius or angle in radians or degrees) when given the arc length.
2. Define the meaning of a bearing when applied to a trigonometry problem and discuss the two ways they can be written. Create and solve an original word problem using a bearing.
3. Define a reference angle. Explain how to find the reference angle in each quadrant. Give one example of finding a reference angle in degrees, radians and approximate radians. Each example must come from a different quadrant using QII, QIII, and QIV.

Category 3:

1. Define angular speed and linear speed in your own words. Create an original problem in which you find both angular and linear speeds. Include unit conversions in the problem. Create a second word problem finding revolutions given linear speed and radius. Include unit conversions in the problem.
2. Explain how the trig values for the common angles (30°/$\frac{π}{6}$, 60°/$\frac{π}{3}$, 45°/$\frac{π}{4}$) on the unit circle are developed for sine, cosine and tangent. Then explain the relationship between these trig functions and cosecant, secant and cotangent.
3. Describe the process of finding the values or ratios of any common angle or quadrant angle (the ones on the axes) on the unit circle. Give four examples using both radians and degrees. Include at least two examples outside quadrant I and at least one example of a quadrant angle. Use a variety of the six trigonometric functions. (ie: what are the steps to find the values of sin $\frac{11π}{6}$ or cos $π$, etc.)
4. In your own words, explain why finding an angle, when given a ratio, has two possible answers over the intervals $\left[0°, 360°\right) and [0, 2π)$. Give a minimum of three examples which demonstrate this concept. Include problems with answers that lie in different quadrants and one whose answer(s) are quadrant angles. Use both radians and degrees in your examples.