Pre-Calculus Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Trig Art Project

***Periodic Art***



Your goal is to design a work of art using only the sine and cosine functions. Your design **must** include both sine and cosine functions. It must contain six (6) graphs on the same set of coordinate axes. All but one graph must include a phase shift (**in fractions of, but not **), a change in period, or a change in amplitude. At least three graphs must contain a combination of two of the three. Use your calculators to help you arrive at a pleasing design. **One more time, phase shifts must be in fractions of .**

**Part 1** – The Equations: On the attached sheet of paper, list the equations you used in making your design. For each equation, fill in the information on period, amplitude and phase shift. This section is worth 35 points.

**Part 2** – The Graphs: Graph all of your functions on the same set of coordinate axes. Be sure to label your x-axis and your y-axis. Without appropriate labels, no credit will be given. You may use your own paper if you so desire. This section is worth 35 points. **Please graph between .**

**Part 3** –TheArt: Transfer your design to an 8½” x 11”(at least) piece of white paper. Color your design. Mount this design on construction paper, or in some other aesthetically pleasing manner. Put a title on your design and sign your work. This section is worth 30 points. These points include neatness, creativity, and effort. **This should be impressive work!**

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Part 1 – The Equations

Turn this paper in with your graphs

**Equation 1**: f(x) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period: \_\_\_\_\_\_\_ Phase Shift: \_\_\_\_\_\_\_\_\_ Amplitude: \_\_\_\_\_\_\_\_

**Equation 2**: f(x) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period: \_\_\_\_\_\_\_ Phase Shift: \_\_\_\_\_\_\_\_\_ Amplitude: \_\_\_\_\_\_\_\_\_

**Equation 3**: f(x) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period: \_\_\_\_\_\_\_ Phase Shift: \_\_\_\_\_\_\_\_\_ Amplitude: \_\_\_\_\_\_\_\_\_

**Equation 4**: f(x) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period: \_\_\_\_\_\_\_ Phase Shift: \_\_\_\_\_\_\_\_\_ Amplitude: \_\_\_\_\_\_\_\_\_

**Equation 5**: f(x) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period: \_\_\_\_\_\_\_ Phase Shift: \_\_\_\_\_\_\_\_\_ Amplitude: \_\_\_\_\_\_\_\_\_

**Equation 6**: f(x) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period: \_\_\_\_\_\_\_ Phase Shift: \_\_\_\_\_\_\_\_\_ Amplitude: \_\_\_\_\_\_\_\_\_

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Grading Rubric

This sheet must be turned in with your project in order to receive a grade.

Part 1: \_\_\_\_\_\_\_\_\_\_\_\_\_ ( 35 points )

Part 2: \_\_\_\_\_\_\_\_\_\_\_\_\_ ( 35 points )

Part 3: \_\_\_\_\_\_\_\_\_\_\_\_\_ ( 30 points )

Total: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( 100 points)