

Name: _____

Trigonometry Graphing Project

The Trigonometry Graphing Project is in place of a test. That means it is worth 100 points, and will be graded rigorously. Put forth your best effort on this project as it has the same importance as a test. Your project is due:

There will be check points along the way to ensure you're not procrastinating. These check points will be part of the grade for this project. Please reference the attached rubric to see what you will be graded on.

Step 1: Create your function

Choose to graph either **sine** or **cosine** apply three transformations to your functions. The transformations must be

*Amplitude

*Vertical Shift

and *Phase Shift **OR** Period Change (you cannot have both of these together)

Step 2: Graph your function

You will have 4 graphs (all in the same coordinate plane) when you are done. First you will graph just sine or cosine by itself. The next three graphs will add on one transformation at a time. For example, if your function was $f(x) = 2 \sin\left(x + \frac{\pi}{2}\right) - 1$, your graphs would be as follows:

Graph 1: $\sin(x)$

Graph 2: $2 \sin(x)$

Graph 3: $2 \sin\left(x + \frac{\pi}{2}\right)$

Graph 4: $2 \sin\left(x + \frac{\pi}{2}\right) - 1$

YOUR GRAPHS MUST BE COLOR COORDINATED AND LABELED!

Our function is: _____ Approved: _____

Step 3: Make a beautiful trigonometry picture!

Use the bottom half of your poster board to take the shape of your graphs to make a picture. This is your time to let your artistic genius shine! Pictures must be colored and school appropriate.

Step 4: Questions

Answer the following questions on the back or front (if room) of your poster board:

- 1.) What is being measured along the x-axis?
- 2.) What is being measured along the y axis?
- 3.) What is the domain of your graph's first period? (Use the final graph with all three transformations)
- 4.) What is the range of your graph's first period? (Use the final graph with all three transformations)
- 5.) What is the amplitude of your function and what does it do visually to your graph?
- 6.) What is the vertical shift of your functions and what does it do visually to your graph?
- 7.) What is the phase shift OR period of your function and what does it visually do to your graph?

Trigonometry Graphing Project Rubric

Partners: _____

	Points Earned/Feedback	Points Possible
Sine/Cosine Graph		10
Graph with transformation 1		10
Graph with transformation 2		10
Graph with transformation 4		10
Artistic creation		10
Neatness		6
Question 1		2
Question 2		2
Question 3		2
Question 4		2
Question 5		2
Question 6		2
Question 7		2
Total:		70