

Trigonometry Parameter Comparisons – Class Handout

In this activity, you will go through several steps to develop an equation for your graph. All functions shown could be written in the form $y = a \sin(bx + c) + d$.

Amplitude

1. Determine the amplitude of your graph. Then, find all of your classmates who have graphs of functions with the same amplitude.
 2. Describe the similarities in the collection of graphs that have the same amplitude as your graph.
 3. For each graph in your group, determine the maximum value (height), the minimum value, and the value of the maximum value minus the minimum value. How is this calculation related to the amplitude?
 4. Use the amplitude to determine the a portion of your equation, and then wait for your instructor to ask you to move to the next step.
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Period

1. Determine the period of your graph. Then, find all of your classmates who have graphs of functions with the same period.
 2. Describe the similarities in the collection of graphs that have the same period as your graph.
 3. For each graph in your group, calculate the frequency. How does this number compare to the period? What is the difference between period and frequency graphically?
 4. Use the period to determine the b portion of your equation, and then wait for your instructor to ask you to move to the next step.
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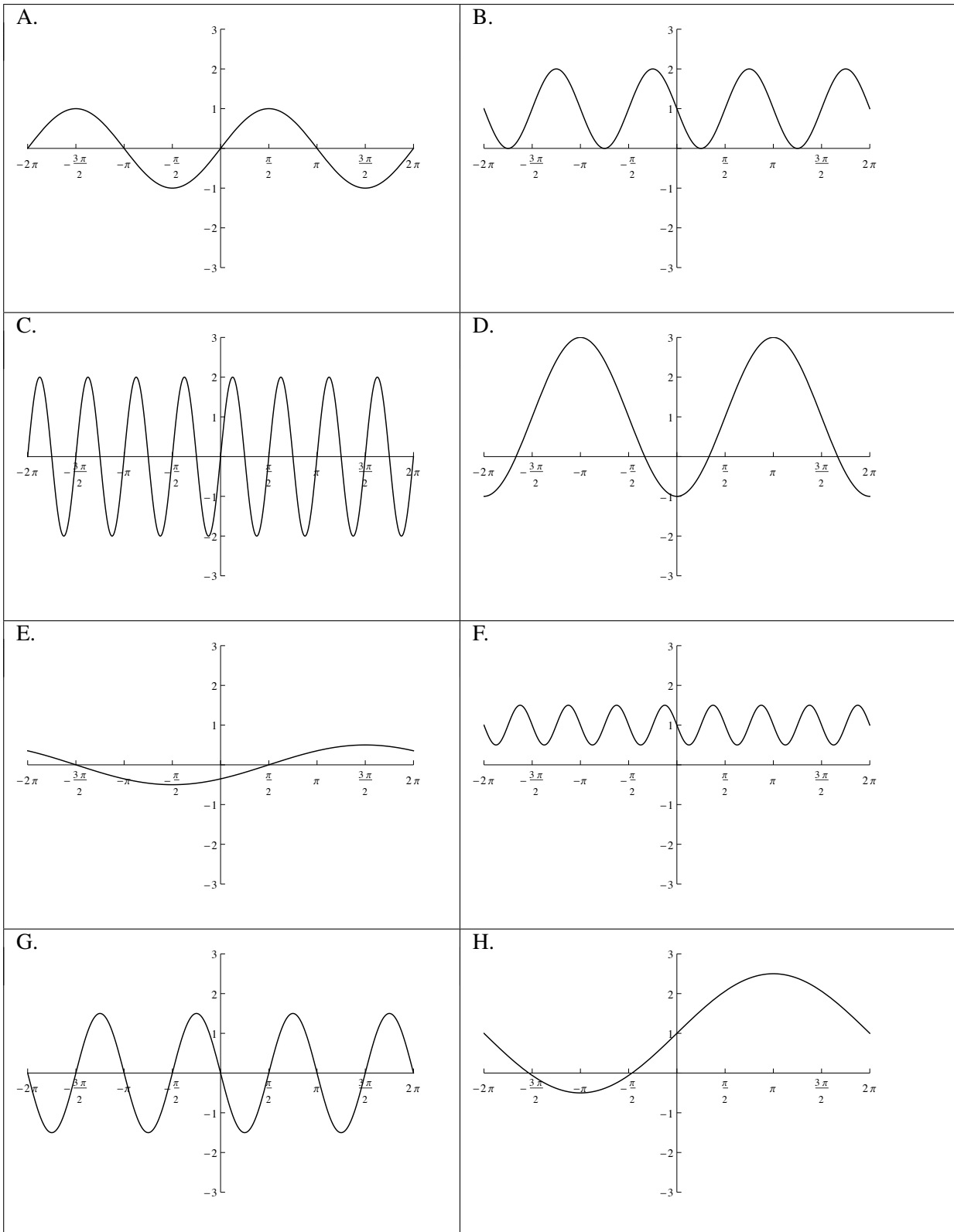
Vertical Shift

1. Determine the vertical shift of your graph, keeping in mind that there might not be a vertical shift (i.e., the vertical shift is zero). Then, find all of your classmates who have graphs of functions with the same vertical shift.
 2. Describe the similarities in the collection of graphs in your group that have the same vertical shift.
 3. Use the vertical shift to determine the d value in your equation, and then wait for your instructor to ask you to move to the next step.
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Phase Shifts

1. Determine a phase shift for your graph, keeping in mind that there might not be a phase shift (i.e., the phase shift is 0). Then, find all of your classmates who have graphs of functions with the same phase shift. If you are having trouble finding anyone, try computing another value for the phase shift.
2. Describe the similarities in the collection of graphs in your group that have the same phase shifts.
3. As a group, determine two other phase shifts that would generate the same graph. How could you describe an infinite number of other phase shifts that could also be used to generate the same graph?
4. Use one of your phase shifts to determine a value for c in your equation.

Graphs for Trigonometric Parameter Comparison Activity



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