Trigonometric Graphs Worksheet

In this activity, we will investigate the influence of the four coefficients: **a, b, h,** & **k** on the graphs of the sine and cosine functions. Answer the following questions while working through the presentation.

Problem 1

1. Describe the changes to the graph of the sine function when the variable **a** increases or decreases.

2. Compare and contrast the graph of the sine function when **a** = 2 and **a** = -2. What about **a** = 3 and **a** = -3?

3. What is the value of the variable **a** if the distance between the max and min is 4? What if the distance was 5? What if the distance was 1?

4. In your own words, describe the period of a trigonometric function.

5. What is the value of **b** if the distance between peaks is $\pi/2$? What if the distance was 4π? What if the distance was 3π?

6. Compare and contrast the affects of changing variables **a** and **b** on the graph of the sine function.

7. Compare and contrast the affects of changing **h** and **k** on the graph of the sine function.

Problem 2

8. Compare and contrast the affects of changing **a** and **b** on the graph of the cosine function with their affects on the graph of the sine function.

9. Compare and contrast the affects of changing **h** and **k** on the graph of the cosine function with their affects on the graph of the sine function.

10. Locate and describe the significance of the intersection points of the graphs of the sine function and the cosine function.

For each of the following, describe the transformations to the parent graph.

11. Describe what happens when **a** increases.

12. Describe what happens when **a** decreases.

13. Describe what happens when **b** increases.

14. Describe what happens when **b** decreases.

15. Describe what happens when **h** increases.

16. Describe what happens when **h** decreases.

17. Describe what happens when **k** increases.

18. Describe what happens when **k** decreases.