**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Exploring the Effects of the Parameters in the Following Functions:**

***f* (x) = *a* (tan(*b*x – *c*)) + *d***

***f ‘*(x) = *a* (cot(*b*x – *c*)) + *d***

***g* (x) = *a* (csc(*b*x – *c*)) + *d***

***h* (x) = *a* (sec(*b*x – *c*)) + *d***

1. Predict how the values of *a, b, c*, and *d* will affect the graph of the functions.
2. Using the Shodor.org website

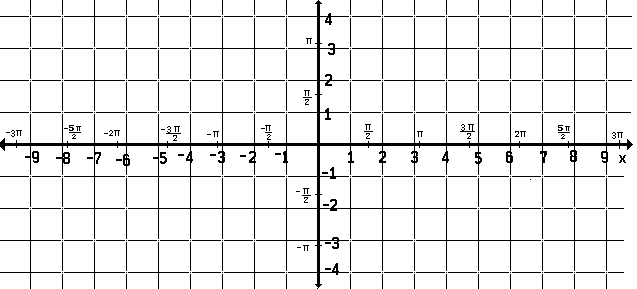
http://www.shodor.org/interactivate/activities/DataFlyer/

Type in the function f(x) = 1\*tan(1\*x - 0) + 0.

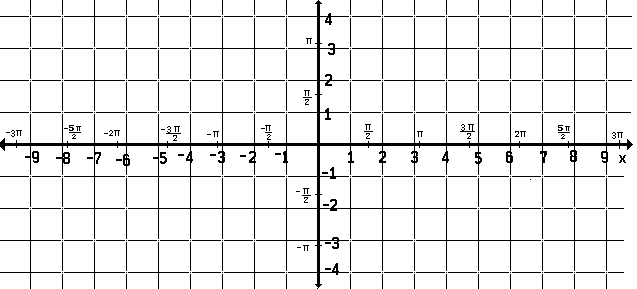
Change the value of a, b, c, & *d* and observe what happens.

Do the same for *f ‘(x), g(x), & h(x)*

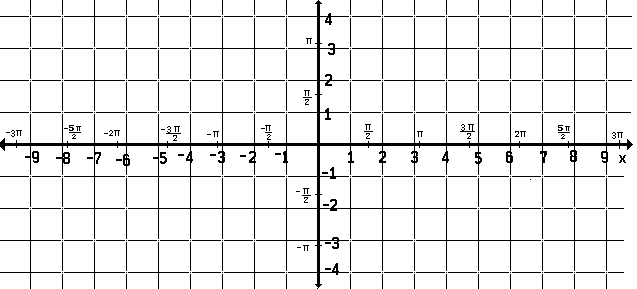
1. Describe how the values of *a, b, c*, and *d* affect the graph of the function.
2. Based on your answer to #3, provide a description of how, in terms of a, b, c, and d, you can determine the amplitude, period, horizontal shift, and vertical shift of the graph.
3. Graph the following by hand.
   1. y = tan (2x)



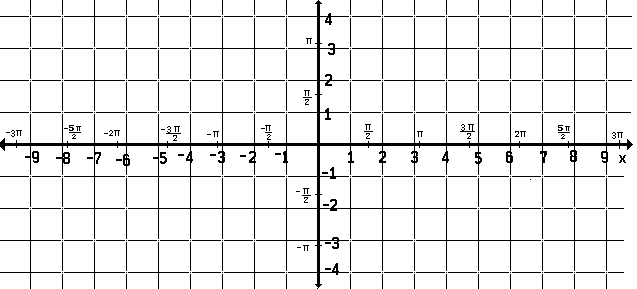
* 1. y = 2 cot (x) +1

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* 1. y = ½ sec(x – (π/4))

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* 1. y = csc(x – (π/2)) - 3

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