

Exponential Function Worksheet 1

Name _____ Date _____ Period _____

Teacher _____ Due Date _____

Use Manipulative 1 at the web address <http://www.allmathwords.org/exponentialfunction.html> to complete this worksheet.

General form

1. Write the general form of an exponential equation. _____
2. What does the 'a' represent in the general form of an exponential equation?

3. What does the 'b' represent in the general form of an exponential equation?

Initial Value

In the manipulative, move the slider labeled 'b' to the value 1. You can move the slider by clicking on the point and dragging it back and forth. After moving slider 'b' to 1, move slider 'a' back and forth.

4. At what value of x does the value of the function *not* change? _____
Now move the slider 'a' to the value 2. Move slider 'b' to the value 2.
5. At $x=0$, what is the value of the function $f(x) = 2 \cdot 2^x$? _____
Now move slider 'b' to value 1.
6. What is the value of the function $f(x) = 1 \cdot 2^x$ at $x=0$? _____
Now move slider 'b' to value -1.
7. What is the value of the function $f(x) = -1 \cdot 2^x$ when $x=0$? _____
8. For any value of 'a', what is the value of the function $f(x) = b \cdot a^x$ when $x=0$?

Rate of Decay or Growth

In the manipulative, move the slider labeled 'b' to value 1.0.

9. What changes in the graph when you move slider 'a' back and forth? _____
10. What happens to the curve when $a = 1.0$? _____
11. When $a < 1.0$, is the function a growth function or a decay function? _____
12. When $a > 1.0$, is the function a growth function or a decay function? _____