

Key

Sept. 15 Worksheet

1. Linear functions are written in which form?

Slope-intercept $y = mx + b$

2. For exponential growth, you _____, instead of _____ like in a linear function.

multiply/divide

add/subtract

3. What is the "toolbox" or base function for an exponential?

$$y = b^x$$

4. To represent growth or decay, what is the function?

$$y = Ab^x$$

What does the A represent?

Starting point and y-intercept

What does the b represent?

growth or decay factor

5. How do we know between growth and decay?

Growth $\rightarrow A > 0$ and $b > 1$

decay $\rightarrow A > 0$ and $0 < b < 1$

6. Compare $f(x) = 5^{-x}$ and $g(x) = (1/5)^x$

$$f(x) = \frac{1}{5^x} \quad g(x) = \left(\frac{1}{5}\right)^x$$

x	f(x)	g(x)
-2	25	25
-1	5	5
0	1	1
1	.2	.2
2	.04	.04

What do you notice?

they are the same

7. Common ratio is another way our _____ is represented?

base number / growth or decay factor

8. Starting value is another word for the _____?

"A", y-intercept

9. Find the equation of the exponential curve that passes through (0, 5) and (3, 40)

$$y = 5(2)^x$$