

TRS 92: Explorations with Exponential Functions

Part A: Complete the table below.

	Percentage Change	For an increase, multiply by...	For a decrease multiply by...
1.	25%		
2.	2.5%		
3.		1.08	
4.			0.76
5.		1.113	

Part B: Complete each table for the function given and answer the questions about each function.

1. $y = 2(1.5)^x$

x	y
0	
5	
10	115.33
15	
20	
25	50,502.3
30	

- a) Does the function represent growth or decay?
- b) Vertical intercept: _____
- c) Factor: _____ Rate: _____

2. $y = 5(1.5)^x$

x	y
0	
7	85.43
10	
15	2,189.47
17	
20	16,626.3
28	

- a) Does the function represent growth or decay?
- b) Vertical intercept: _____
- c) Factor: _____ Rate: _____

3. $y = 3(1.1)^x$

x	y
0	
4	4.4
7	5.8
12	
14	11.4
18	16.7
21	

- a) Does the function represent growth or decay?
- b) Vertical intercept: _____
- c) Factor: _____ Rate: _____

4. $y = 1.5(1.1)^x$

x	y
0	
2	
4	2.20
7	2.92
8	3.22
11	
14	5.7

- a) Does the function represent growth or decay?
- b) Vertical intercept: _____
- c) Factor: _____ Rate: _____

5. $y = 0.5(1.14)^x$

x	y
0	0.5
5	0.963
10	1.854
15	
20	6.872
25	13.231
30	

- a) Does the function represent growth or decay?
- b) Vertical intercept: _____
- c) Factor: _____ Rate: _____

6. $y = 6(1.14)^x$

x	y
0	
4	10.134
7	15.014
12	
14	37.568
18	
21	94.005

- a) Does the function represent growth or decay?
- b) Vertical intercept: _____
- c) Factor: _____ Rate: _____

7. $y = 3(0.9)^x$

x	y
0	3
5	1.772
10	
15	0.618
20	
25	0.215
30	

- a) Does the function represent growth or decay?
- b) Vertical intercept: _____
- c) Factor: _____ Rate: _____

8. $y = 8(0.65)^x$

x	y
0	8
4	
7	0.392
12	
14	0.019
18	
21	0.00094

- a) Does the function represent growth or decay?
- b) Vertical intercept: _____
- c) Factor: _____ Rate: _____

Part C:

9. A common mold grows at a rate of 3.57% each day. A researcher has decided to start with a sample of 25 grams of mold.
- a. Completely define the independent and dependent variables for the situation.
- b. Write the exponential equation that represents this situation using the variables defined in **part a**.