

## Lesson 4: Graphing Exponentials in the Form $y = b^x$

Determine the equation for each scenario given.

1. My initial value is 1 and every time my x-value increases by 1, my y-value doubles.
2. My initial value is 1 and every time my y-value increases by 1, my y-value gets cut in half.
3. Here's my table, what's my equation?

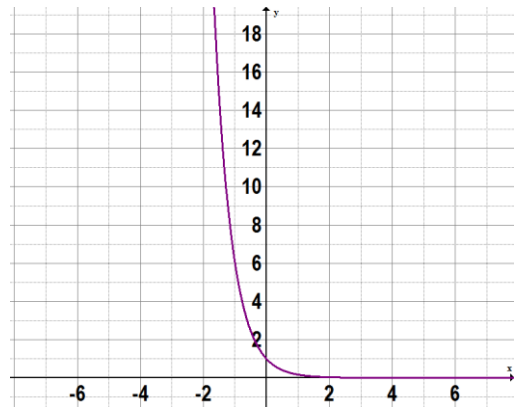
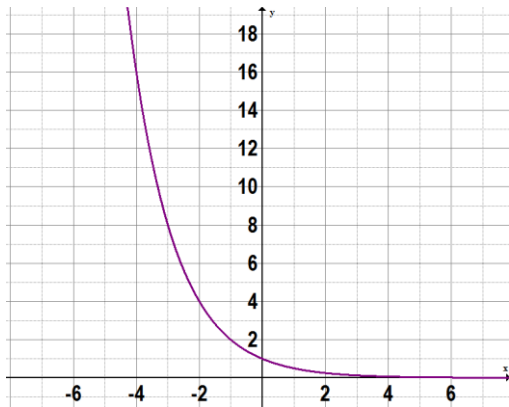
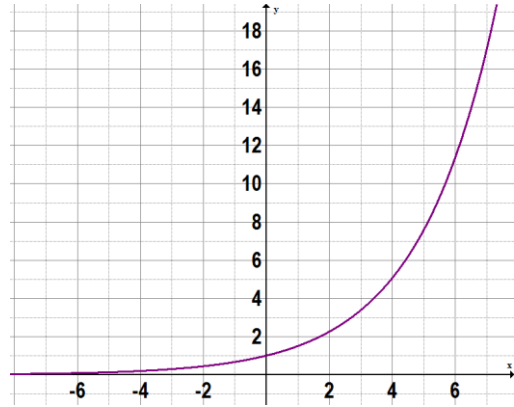
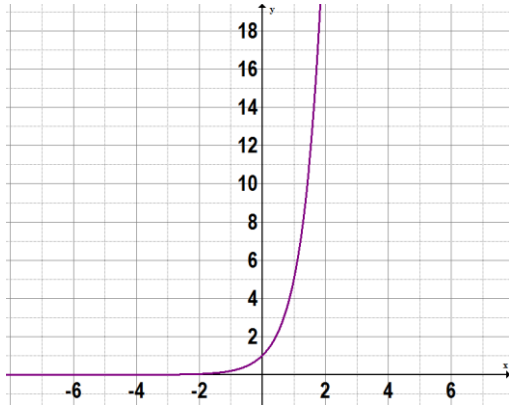
x	y
-2	$\frac{1}{9}$
-1	$\frac{1}{3}$
0	1
1	3
2	9

x	y
-2	16
-1	4
0	1
1	0.25
2	0.0625

x	y
-2	0.04
-1	0.2
0	1
1	5
2	25

x	y
-2	9
-1	3
0	1
1	$\frac{1}{3}$
2	$\frac{1}{9}$

4. Here's my graph, what's my equation?



5. Here's my equation, make me a table of values!

$$y = \left(\frac{1}{2}\right)^x$$

x	y
-2	
-1	
0	
1	
2	

$$y = 4^x$$

x	y
-2	
-1	
0	
1	
2	

$$y = 0.4^x$$

x	y
-2	
-1	
0	
1	
2	