7. A car purchased for $24,000 is expected to lose value, or depreciate, at a rate of 8% per year. This situation can be modeled by $y = 24,000 \cdot (0.92)^t$, where t is the number of years since the car was purchased. After how many years is the car first worth less than $15,000?

     a) 4 years   b) 5 years   c) 6 years   d) 7 years

8. A watch purchased for $1200 is expected to gain value at a rate of 5% per year. This situation can be modeled by $y = 1200 \cdot (1.05)^t$, where t is the number of years since the car was purchased. After how many years is the car first worth more than $1800?

     a) 7 years   b) 8 years   c) 9 years   d) 10 years

Write an exponential function for each table below using the steps above in Example 1.

1. _____   2. _____   3. _____

x	y
0	12
1	34.8
2	100.92
3	292.668
4	848.7372

x	y
1	2
2	1
3	.5
4	.25
5	.125

x	y
2	.846
3	.2538
4	.07614
5	.022842
6	.0068526

4.

Years since 2000	4	8	12	16
Population	336	5376	86016	1376256

Write an exponential function to represent population growth since the year 2000.
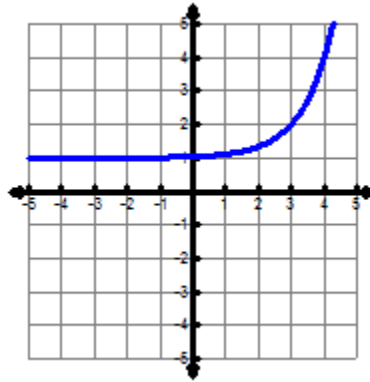
_____

Practice- Practice- Practice- Practice- Practice- Practice- Practice- Practice- Practice! ☺

Determine whether each function below represents an Exponential Growth or Decay.
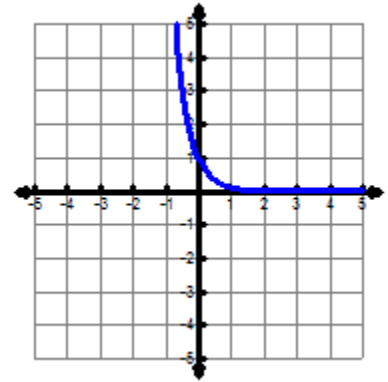
5. Growth or Decay?
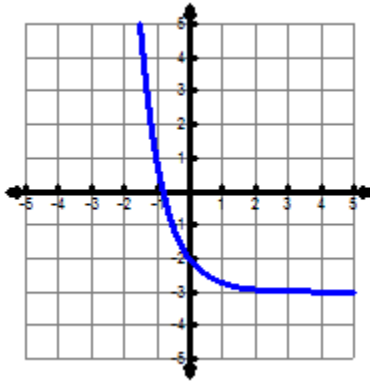
6. Growth or Decay?

7. Growth or Decay?

8. Exponential Growth or Decay?

$$y = .1(7)^x$$

9. Exponential Growth or Decay?

$$y = 3(.25)^x$$

10. Exponential Growth or Decay?

$$y = \left(\frac{3}{4}\right)^x$$

11. Exponential Growth or Decay?

$$y = \frac{1}{2}\left(\frac{5}{3}\right)^x$$

12. Given $f(x) = 4(5.6)^x$, identify the growth/decay factor, growth/decay rate, and the initial value.

Growth/Decay Factor_____

Growth/Decay Rate_____

Initial Value_____

13. Given $f(x) = 11(.40)^x$, identify the growth/decay factor, growth/decay rate, and the initial value.

Growth/Decay Factor_____

Growth/Decay Rate_____

Initial Value_____

13. Given $f(x) = \left(\frac{1}{4}\right)^x$, identify the growth/decay factor, growth/decay rate, and the initial value.

Growth/Decay Factor_____

Growth/Decay Rate_____

Initial Value_____