

Sections 3.1, 3.2

1. Fill in the following table:

	Function	Vertical Intercept	Growth or Decay?	Rate (as a percent)
a.	$f(x) = 24(1.32)^x$			
b.	$f(x) = 3324(0.92)^x$			
c.	$f(x) = (1.04)^x$			
d.		(0, 231)	Decay	10%
e.		(0, 530)	Growth	16%

2. Determine if each data set is linear or exponential, and find the appropriate formula.

x	f(x)
0	52
1	41
2	30
3	19

x	g(x)
0	128
1	64
2	32
3	16

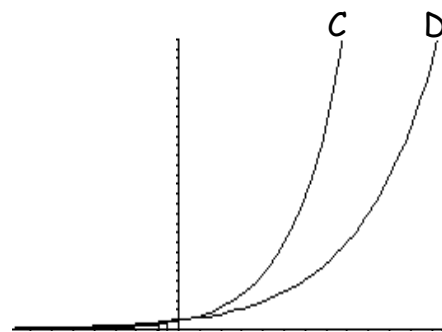
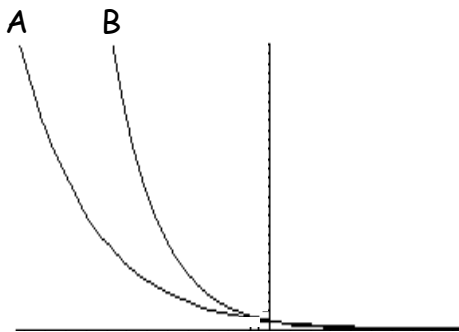
x	h(x)
0	1000
1	1100
2	1210
3	1331

$f(x) =$ _____

$g(x) =$ _____

$h(x) =$ _____

3. Match each formula with the letter of the appropriate graph.



3^x _____ 2^x _____

0.3^x _____

0.2^x _____

4. In 1980, the population of a certain town was 5311 people. **Using function notation**, write a formula for the population, P , of the town t years after 1980, assuming that the town:
- a. Shrinks by 105 people per year.
 - b. Shrinks by 2% per year.
 - c. Grows by 307 people per year.
 - d. Grows by 6% per year.
5. In 1980 the population of Chandler was 30,000. By 2003, it had grown to 170,000.
- a. Assuming that the growth was linear, give a formula that expresses the population x years since 1980. Interpret the slope in a complete sentence.
 - b. Assuming that the growth was exponential, give a formula that expresses the population x years since 1980. Describe in words Chandler's annual population growth under this assumption.
6. Suppose $f(2) = 7$ and $f(5) = 13$. Find a formula for $f(x)$ assuming it is:
- a. Linear.
 - b. Exponential.