

6.3 day 1
Exponential Growth & Decay

Name _____

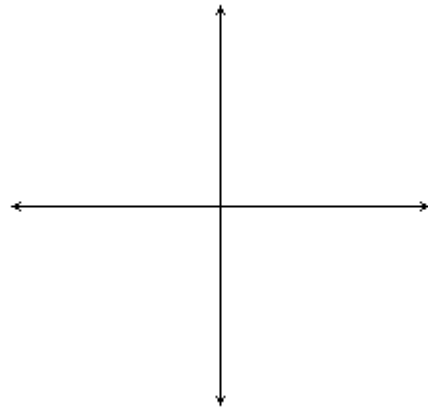
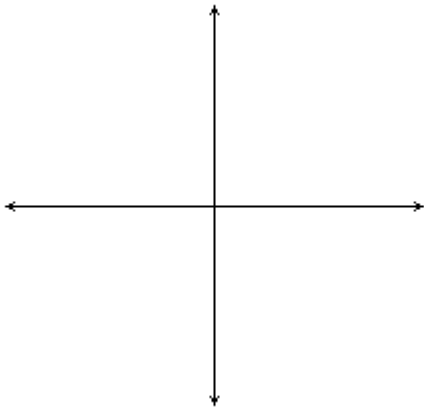
Date _____ Blk _____

1. All exponential functions are in the form $y = a(b)^x$.

a. What values of b make it an exponential growth function? _____

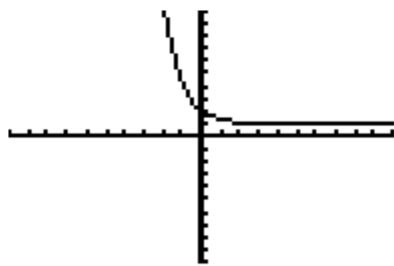
b. What values of b make it an exponential decay function? _____

2a. Sketch an exponential growth function. b. Sketch an exponential decay function.

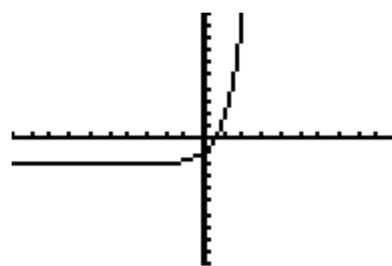


3. Label each function as either exponential growth or exponential decay.

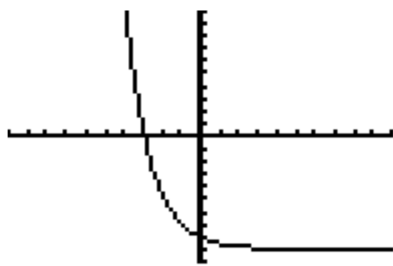
a. _____



b. _____



c. _____



d. _____

$$y = 2.4(3)^x$$

e. _____

$$y = 7(.98)^x$$

f. _____

$$y = 1.9\left(\frac{5}{2}\right)^x$$

g. _____

$$y = 75(1.45)^x + 2$$

h. _____

$$y = 4\left(\frac{2}{7}\right)^x$$

i. _____

$$y = 250\left(\frac{1}{9}\right)^x - 3$$

4. Divide each y-coordinate by the previous y-coordinate to find the **growth/decay factor** for each exponential function, then circle whether the table represents an exponential growth or exponential decay.

a. Growth/Decay Factor _____ Exponential Growth or Exponential Decay?

x	1	2	3	4	5
y	6	18	54	162	486

b. Growth/Decay Factor _____ Exponential Growth or Exponential Decay?

x	0	1	2	3	4
y	100	25	6.25	1.5625	.390625

c. Growth/Decay Factor _____ Exponential Growth or Exponential Decay?

x	0	1	2	3	4
y	\$500	\$550	\$605	\$665.50	\$732.05

5. Suppose you deposited \$1000 into a savings account that earns 3% interest each month. The growth factor is $1 + 3\% = 1 + .03 = 1.03$. Fill in the table by multiplying the previous month's balance by the growth factor of 1.03.

For example: The balance after 1 month is \$1000 times 1.03 = \$1030.

Round to the nearest cent.

Month	0	1	2	3	4	5
Balance	\$1000					