

Name: _____ Per: _____ Date: _____

Serafino ▪ Algebra 2E

7ABC Exponential Functions & Equations Quiz Review

Q1-R Quiz Review

Exponential Growth & Decay

1. A 50-year-old tree is now 30 ft tall and has been growing in my backyard at a rate of 3% per year. How tall was the tree when it was first planted, 50 years ago?
2. The population of tigers is declining at a rate of 4.64% per year. If there are 20,000 now, how many will there be in 100 years?
3. In 1952, a movie ticket cost \$1.50. Today it is \$12.00.
 - a) What equation models the exponential growth of the ticket price?
 - b) What is the percent increase per year?
 - c) What was the average rate of change in price from 1952 to 1962? What about in the last 10 years?
 - d) What will be the price of movie tickets in 50 years, based on your exponential growth model?
 - e) What LINEAR equation could also represent the growth of the ticket price from 1952 to now? What would be the difference in price in 50 years using your linear model?

Compound vs. Continuous Growth & Decay

4. How much will I have in 10 years if I put \$3,000 in an account that compound 6.5% interest...
 - a) Annually?
 - b) Monthly?
 - c) Continuously?

Solving Equations with a Common Base

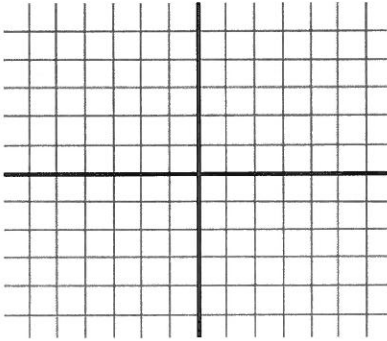
5. Solve the following equations:

a) $8^{2x} = 16$	c) $\left(\frac{1}{8}\right)^{2x} = 4^{-3x}$	e) $6^{3x} \cdot 6^{2x} = 36$
b) $9^{2x+5} = 27^x$	d) $64^{5x} = \frac{1}{16}$	

Graphing Exponential Functions

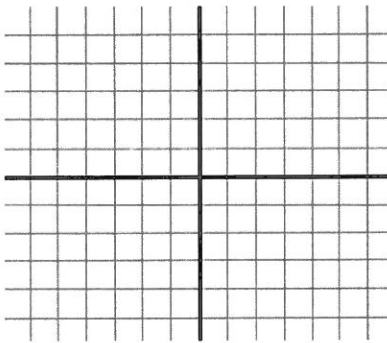
Sketch the following, with a dotted line for the asymptote. If it helps, you can draw the guide function without transformations first, then draw $f(x)$ in color. I'm looking for 3 clear points.

a. $f(x) = -(2)^{-x}$



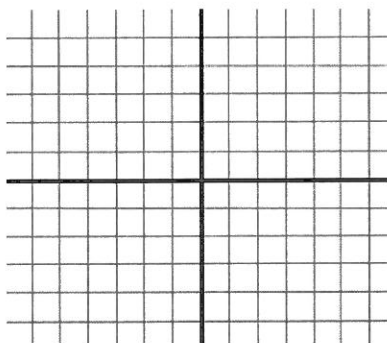
D: R:

b. $f(x) = (2)^{-x} - 4$



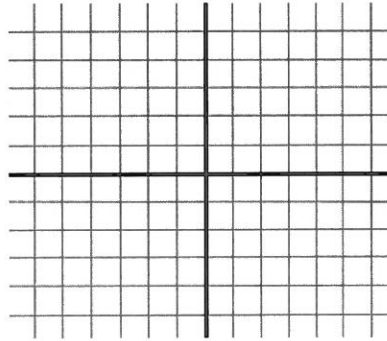
D: R:

c. $f(x) = 4(0.5)^{x-2} - 1$



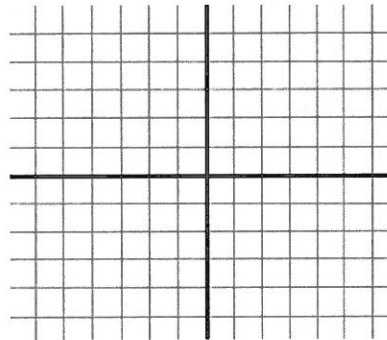
D: R:

d. $f(x) = 4(0.5)^{-x}$



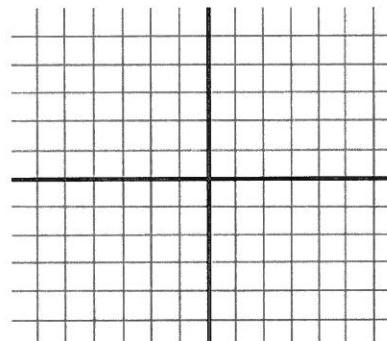
D: R:

e. $f(x) = -(2)^x - 2$



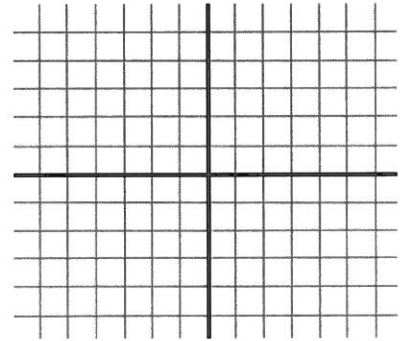
D: R:

f. $f(x) = 2(2)^{x-1} - 3$



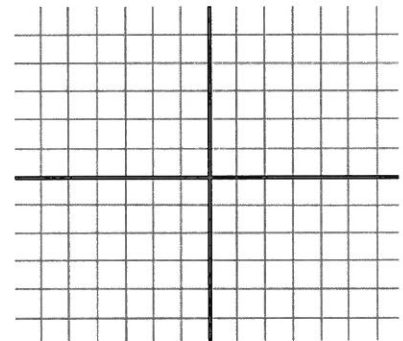
D: R:

g. $f(x) = (3)^x + 1$



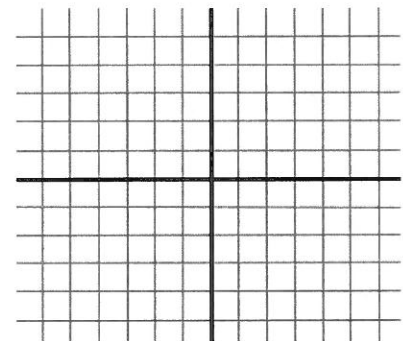
D: R:

h. $f(x) = 3(2)^{x-2} - 4$



D: R:

i. $f(x) = 4(0.25)^x + 2$



D: R: