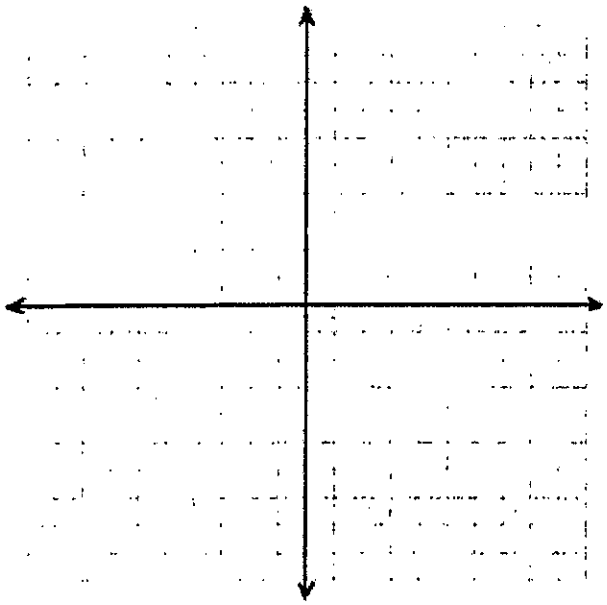
Algebra II Academic
Study Guide - Sections 7.1/7.7 and 7.2

Name _____
Date _____ Period _____

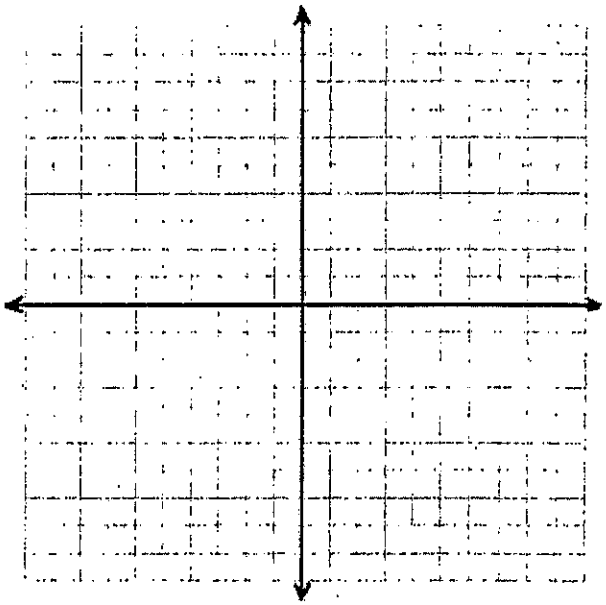
1. $f(x) = \left(\frac{1}{3}\right)^x + 1$



Asymptote: _____ D: _____

Intercept: _____ R: _____

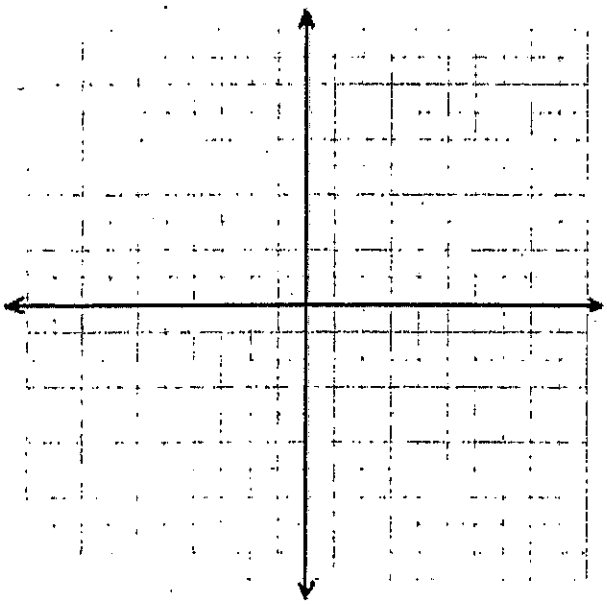
2. $f(x) = -2^{x-1} + 3$



Asymptote: _____ D: _____

Y-Intercept: _____ R: _____

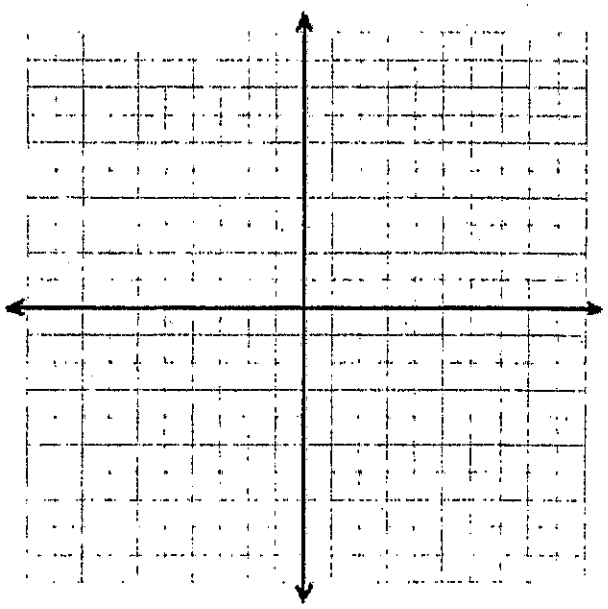
3. $y = \left(\frac{1}{4}\right)^{-x}$



Asymptote: _____ D: _____

Y-Intercept: _____ R: _____

4. $y = 3^{x+2} + 2$



Asymptote: _____ D: _____

Y-Intercept: _____ R: _____

In #5-10, use inverse operations to write the inverse of each function.

5. $f(x) = x + 3$

6. $f(x) = 5x - 1$

7. $f(x) = 3 - \frac{1}{2}x$

8. $f(x) = \frac{1}{2}(3 - 3x)$

9. $f(x) = \frac{3x-5}{2}$

10. $f(x) = \frac{1}{5}x + 12$

11. In 1981, the Australian humpback whale population was 350 and has increased at a rate of 14% each year since then. Write an exponential function to model the population growth.

Based on your model, predict the Australian humpback whale population in 1992.

12. A motor scooter purchased for $1000 depreciates at an annual rate of 15%. Write an exponential function to model the decay.

Based on your model, predict when the scooter will fall below $100.

13. You win $13,575 gambling at the casino. You want to deposit the money and you are comparing interest rates for the banks listed below. At the end of **5 years** you want to have the greatest possible balance.

Which bank should you choose?

Bank	Interest Rate	Compounding
PNC Bank	1.50%	Monthly
Dollar Bank	2.30%	Annually
Citizens Bank	3.45%	Quarterly
Bank of America	2.15%	Continuously

PNC Bank →

Dollar Bank →

Citizens Bank →

Bank of America →

Greatest balance will occur at: _____