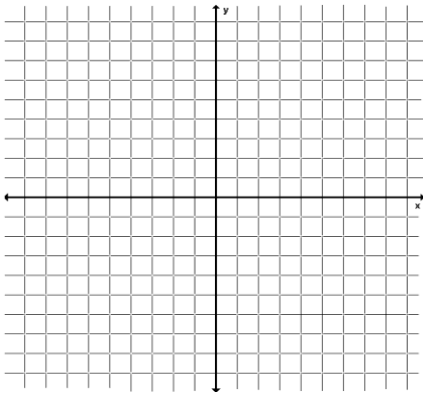# *Chapter 7 Review Worksheet (7.1-7.4)*     *Name:* _____

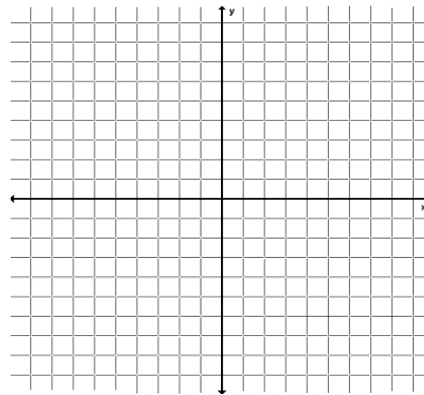**Graph the function. Then state the domain and range.**

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

domain: _____

range: _____
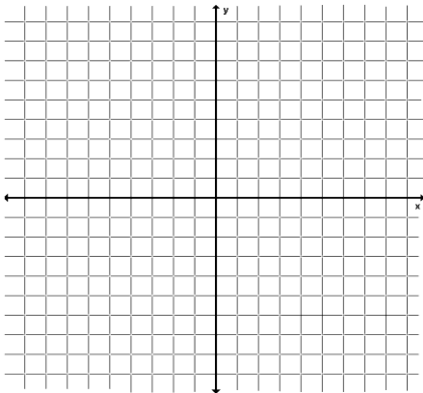
2.) $y = \frac{1}{2}e^{x-2}$

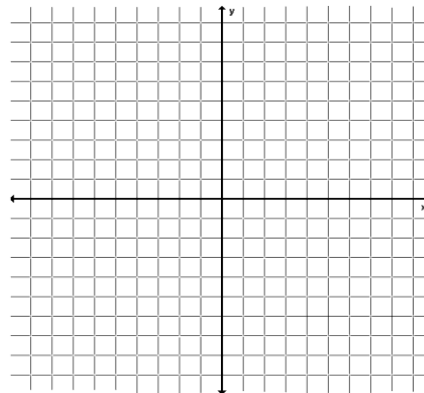domain: _____

range: _____

3.) $y = e^{-0.4(x+2)} + 6$

domain: _____

range: _____

4.) $y = 2(0.8)^{x-1} + 3$

domain: _____

range: _____

5.) You deposit \$1,500 into an account that pays 7% annual interest compounded daily. Find the balance of the account after 2 years.

6.) You deposit $750 in a bank account. Find the balance after 5 years for each of the situations described below.

    a.) The account pays 2.5% annual interest compounded annually.

    b.) The account pays 2.75% annual interest compounded monthly.

    c.) The account pays 3% annual interest compounded continuously.

7.) From 1996 to 2001, the number of households that purchased lawn and garden products at home gardening centers increased by about 4.85% per year. In 1996, about 62 million households purchased lawn and garden products.

    a.) Write a function giving the number of households $H$ (in millions) that purchased lawn and garden products $t$ years after 1996. (Remember to simplify)

    b.) Approximately how many households purchased lawn and garden products were purchased in 2000?

8.) Your new boat is depreciating at an annual rate of 4%. You purchased the boat for $1,906.

    a.) Write a function that models the value $y$ of the boat over time $t$.

    c.) What was the approximate value of the boat in 5 years?

**Rewrite the equation in its alternate form.**

9.) $\log_2 128 = 7$ 　　　　 10.) $y = 5^{x+3}$ 　　　　 11.) $\ln 5x = 2.5$ 　　　　 12.) $10^{3x} = 50$

**Evaluate the logarithm without using a calculator.**

13.) $\log_3 243$ 　　　　 14.) $\log_7 1$ 　　　　 15.) $\log_{1/6} 216$ 　　　　 16.) $\log_{125} \frac{1}{5}$
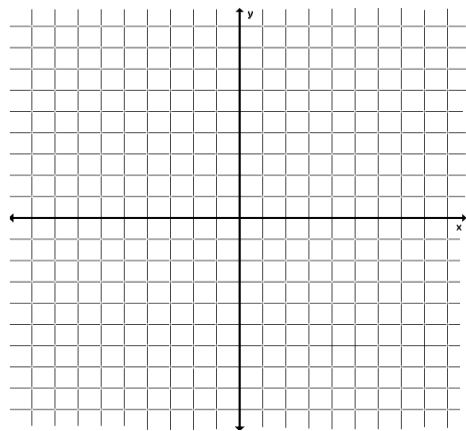
**Find the inverse of the function.**

17.) $y = \log_5 x$ 　　　　 18.) $y = e^{x+2}$ 　　　　 19.) $f(x) = \log_6(x + 2)$

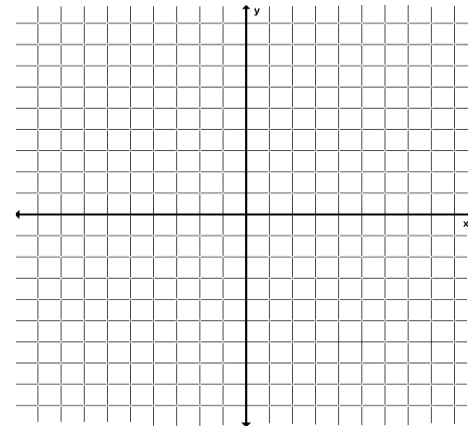**Graph the function.  Then state the domain and range.**
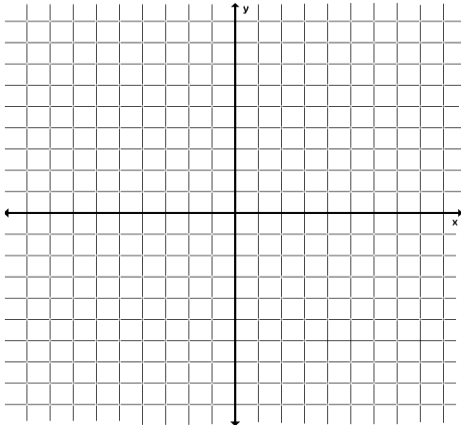
20.) $y = \log_3 x$ 　　　　　　　　　　　　 21.) $f(x) = \log_{4/5} x$

　　　　

domain: _____ 　　　　 domain: _____
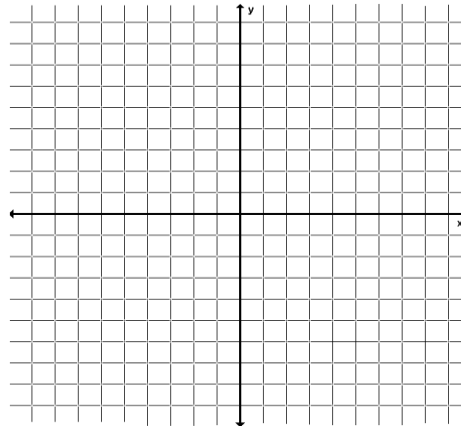
range: _____ 　　　　 range: _____

22.) $g(x) = \ln(x - 1) + 3$

domain: _____

range: _____

23.) $y = \log_2(x + 3) + 2$

domain: _____

range: _____

24.) Researchers have found that after 25 years of age, the average size of the pupil in a
person's eye decreases.  The relationship between pupil diameter $d$ (in millimeters) and $a$
(in years) can be modeled by $d = -2.1158 \ln a + 13.669$.  What is the average diameter
of a pupil for a person that is 25 years old?  50 years old?