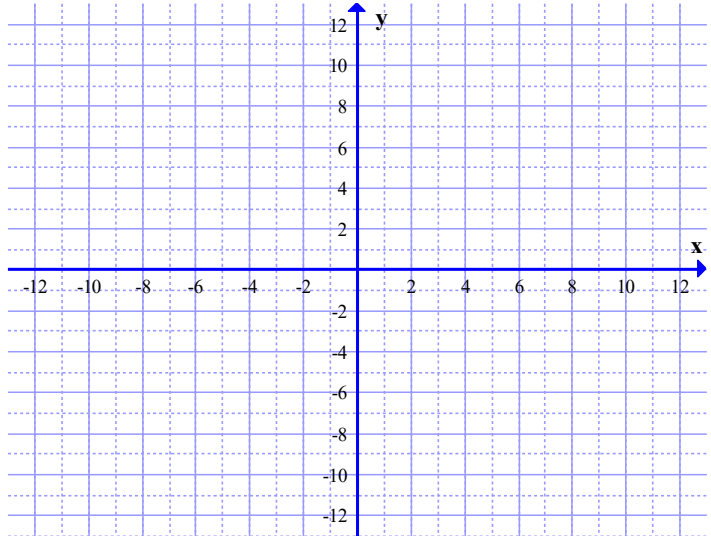


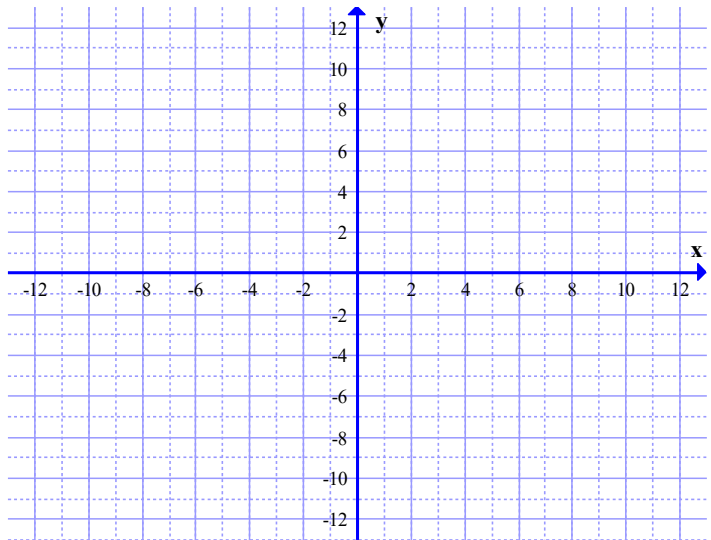
MAC1105 College Algebra
5.1 Practice Problems

1. Graph the following exponential functions using transformation of functions. State the domain and range of each function

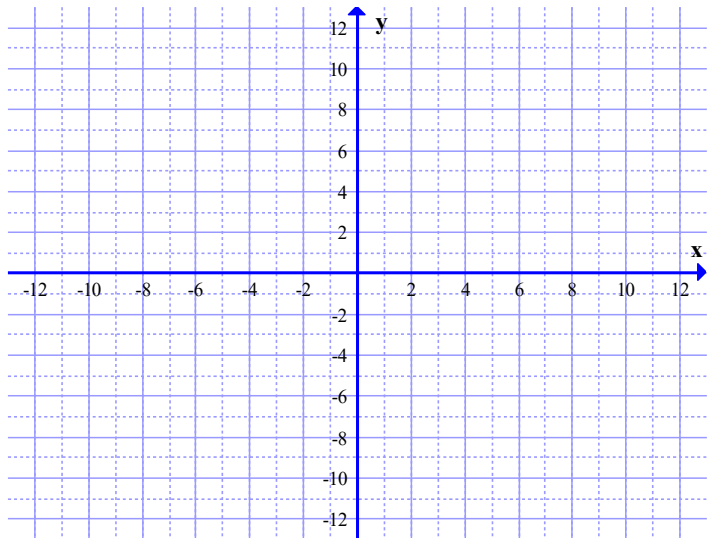
a) $g(x) = -5^{x+2} - 4$



b) $h(x) = \left(\frac{1}{3}\right)^{-x} + 2$



c) $f(x) = -e^{x-2}$



Solve each exponential equation by relating the bases.

2. $4^{2x+4}=64$

3. $8^{x+3}=4^{x-2}$

4. $3^{2x+1}=\frac{1}{27}$

5. $(e^{x-3})^2=e^x\left(\frac{1}{e^2}\right)$

6. The average annual salary of an NBA player follow the exponential model $S(t)=161.4(1.169)^t$, where $S(t)$ is the average annual salary in thousands of dollars and t is the number of years after 1980.

- Find the average annual salary of an NBA player in 1980.
- Find the average annual salary of an NBA player in 1090.
- Find the average annual salary of an NBA player in 1998.

7. Susie invests 5000 dollars in a bank account paying 5% interest per year, compounded quarterly for 10 years. How much will Susie have after 10 years.

8. Tito invests 5000 dollars in a bank account paying 4% interest per year, compounded continuously for 5 years. How much will Tito have after 5 years?
9. Nicholas wants to invest 2000 dollars for 5 years. He has had two offers. One paying 4.5% per year compounded monthly and the other paying 4.45% compounded continuously. Which is the better investment?
10. The Florida Fish and Wildlife Conservation Commission estimates that the black bear population is growing exponentially by 10% and follows the model $P = P_0 e^{10t}$ where t is the the number of years after 1995. If there were an estimated 2850 black bears in 2005, how many black bears were present in 1995?