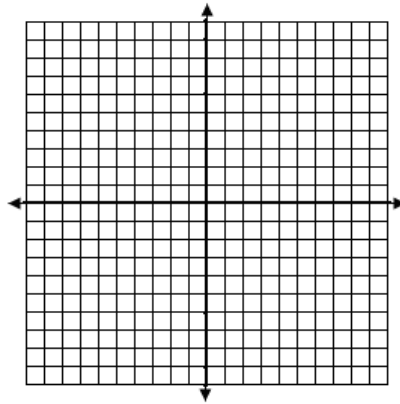


Spring Break Review

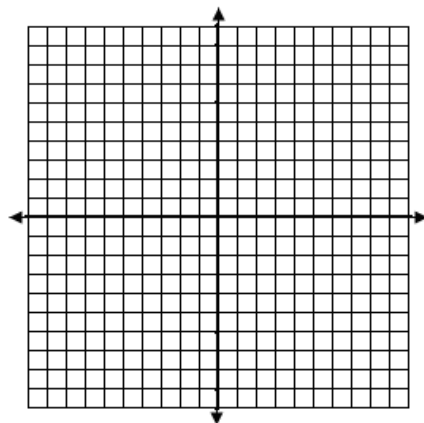
1. Graph the exponential functions $y = 2^x$, $y = 2^x + 3$, and $y = 2^x - 5$ on the same set of axes. In complete sentences, compare and contrast the graphs. *LABEL EACH*



2. Between 1990 and 2000, the population of Michigan had an annual growth rate of about 6.9%. If the state's population was 9,938,444 in 2000, approximately what was Michigan's population in 1990?

3. Determine the amount of money in a savings account providing an annual rate of 3.2% compounded monthly if Sandra made a one-time deposit of \$6500 in to the account and left it there for 5 years.

4. Graph $y > 3^x - 4$.



5. Jared purchases a new car for \$24,600. The car loses 19.5% of its value each year.

a. Write a function to model the VALUE of the car.

b. Find the value of the car after 6 months of ownership

c. Find the value of the car after four years of ownership.

6. Compare the balance after 12 years of a \$32,000 investment earning 5% interest **compounded continuously** to the same investment **compounded quarterly**.

7. Write each equation in exponential form.

a. $\log_{243} 27 = \frac{3}{5}$

b. $\log_{16} 2 = \frac{1}{4}$

8. Write each equation in logarithmic form.

a. $7^5 = 16807$

b. $3^{-3} = \frac{1}{27}$

9. Evaluate the expression $\log_3 6561$.

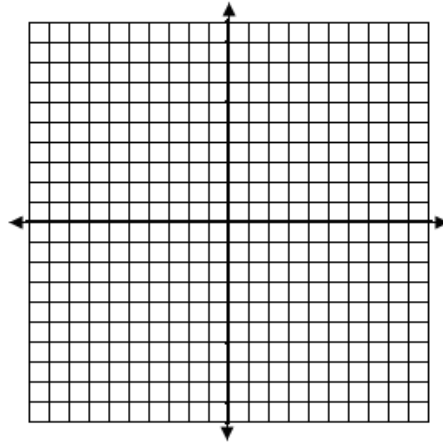
10. Given that $\log 4 = 0.6021$, evaluate the logarithm: $\log 400$

11. Evaluate each expression.

a. $\log 5(2)^8$

b. $\log \frac{12^2}{4}$

12. Graph $y > \log (x - 1)$.



13. Find the value of $\log_4 365$ using the change of base formula.