

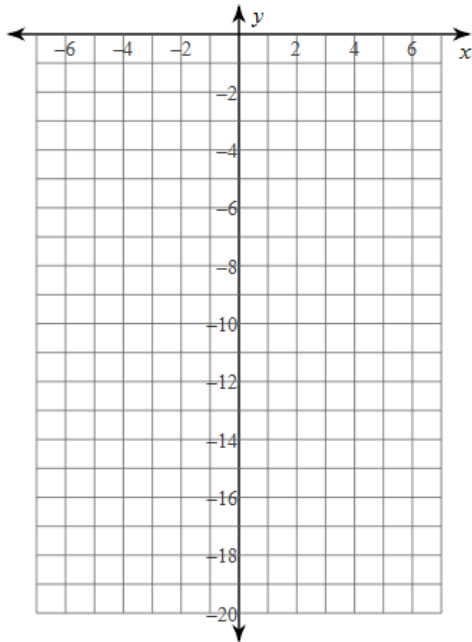
Exponential Growth and Decay Worksheet

27 Points

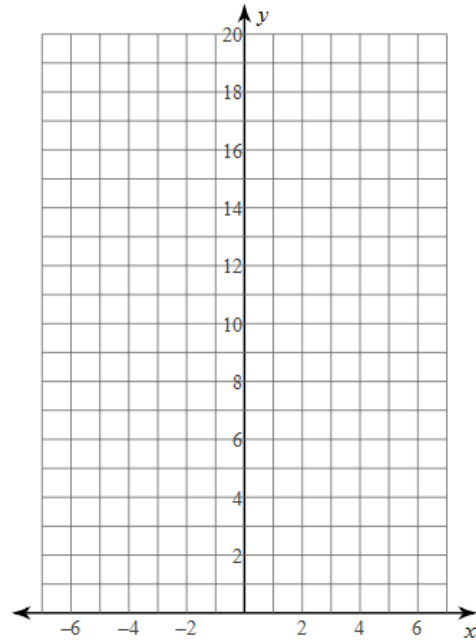
Name _____

Sketch the graph of each function.

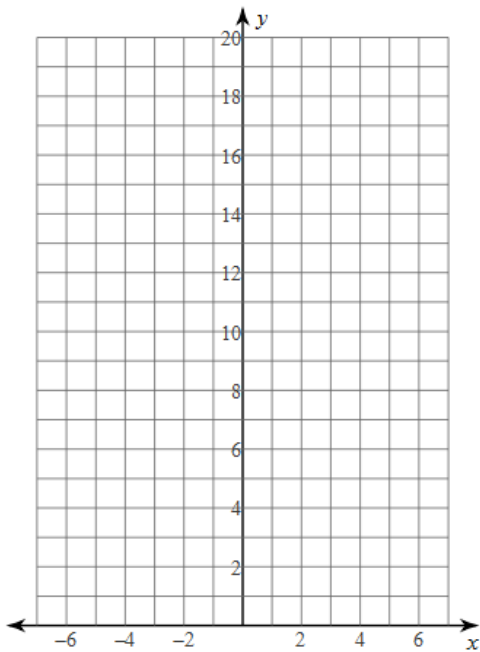
1) $f(x) = -\frac{1}{3} \cdot 2^x$



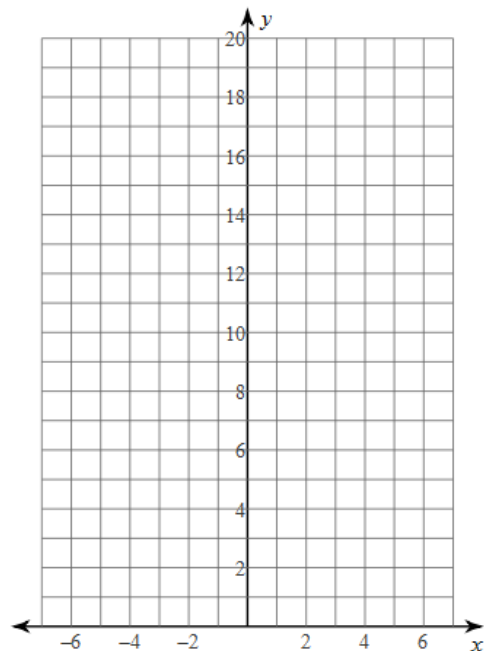
2) $f(x) = 4 \cdot 2^x$



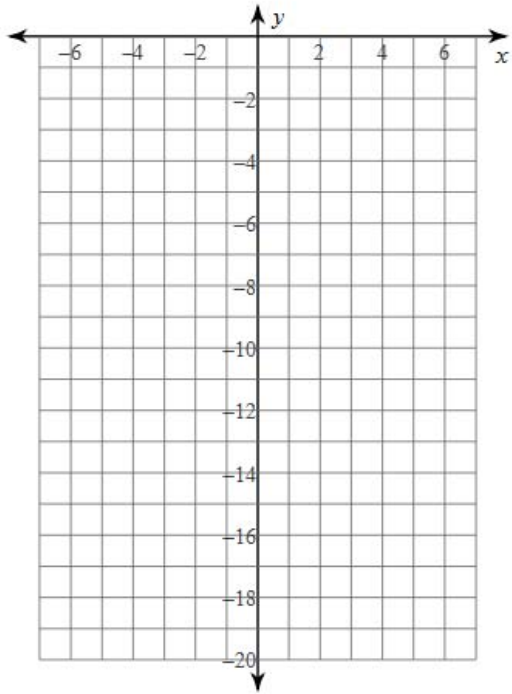
3) $f(x) = 2 \cdot 3^x$



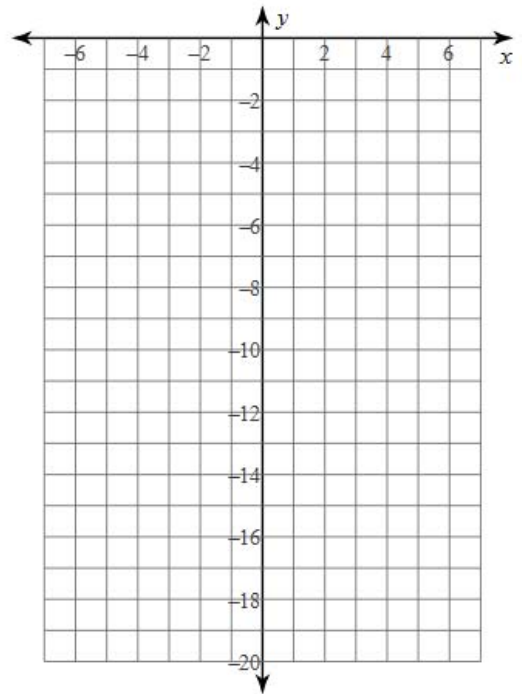
4) $f(x) = \frac{1}{2} \cdot \left(\frac{1}{3}\right)^x$



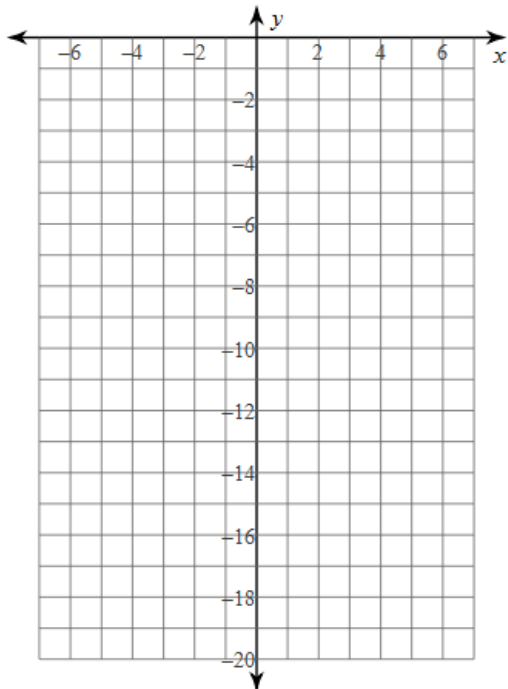
5) $f(x) = -5 \cdot 2^x$



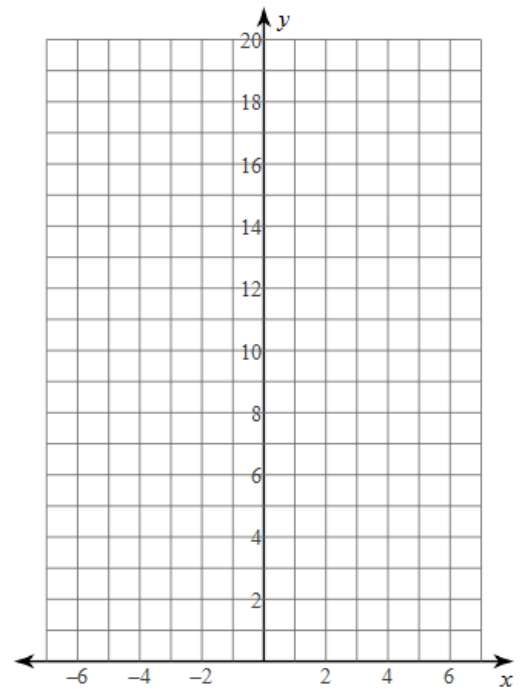
6) $f(x) = -\frac{1}{2} \cdot 2^x$



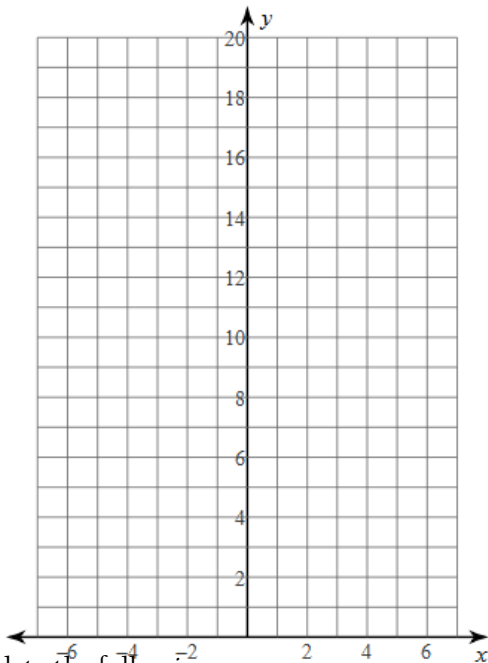
7) $f(x) = -5 \cdot 2^x$



8) $f(x) = \frac{1}{3} \cdot 5^x$

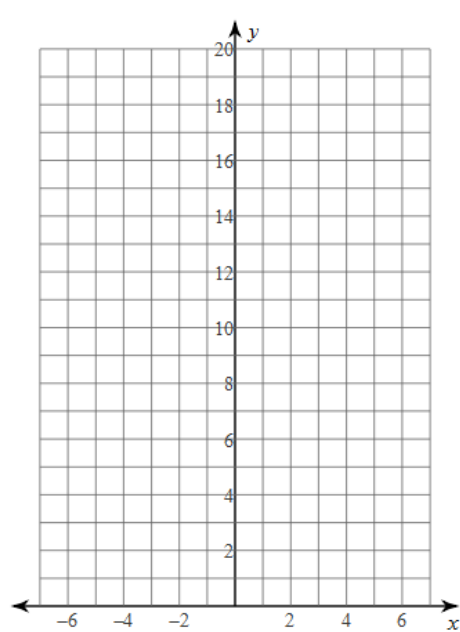


9) $f(x) = 4 \cdot \left(\frac{1}{2}\right)^x$



Complete the following.

10) $f(x) = \frac{1}{3} \cdot \left(\frac{1}{5}\right)^x$



11. Your family bought a house for \$150,000 in 2000. The value of the house increases at an annual rate of 8%.
- Write a function that models the value of the house over time.

b. Use the function to find the value of the house after 5 years.

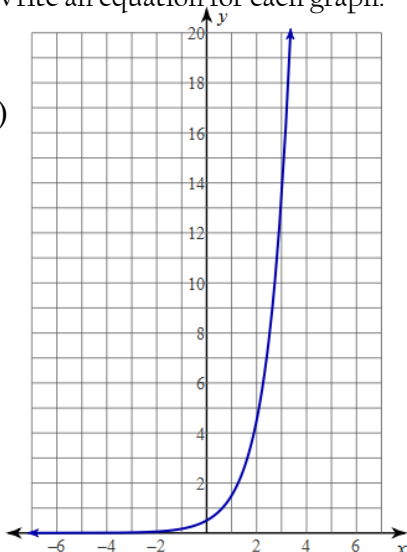
c. Use the function to find the value of the house after 10 years.

12. A recent college graduate accepts a job at a law firm. The job has a salary of \$32,000 per year. The law firm guarantees an annual pay increase of 3% of the employee's salary.
- Write a function that models the employee's salary over time. Assume that the employee receives only the guaranteed pay increase.
 - Use the function to find the employee's salary after 5 years.
13. A high school issued a report that enrollment in physical education classes at their school has been declining at a rate of 6% per year since 1984. For all grades at the high school, enrollment in physical education classes was 2864 in 1984.
- Write a function that models the enrollment over time.
 - Find the approximate number of students enrolled in physical education in 2006.

Bonus!

Write an equation for each graph.

1)



2)

