



GRAPHING EXPONENTIAL FUNCTIONS WORKSHEET

Match each function with its graph.

1. $f(x) = 2^x$

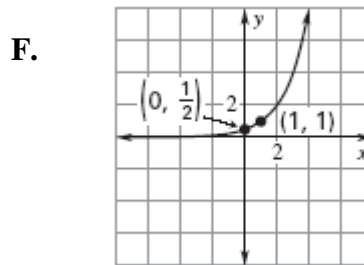
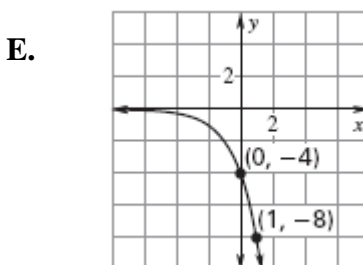
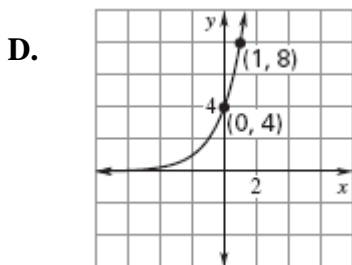
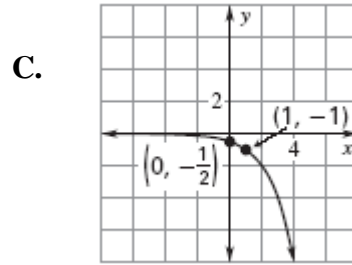
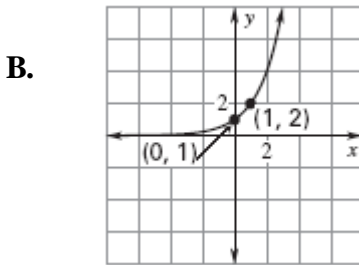
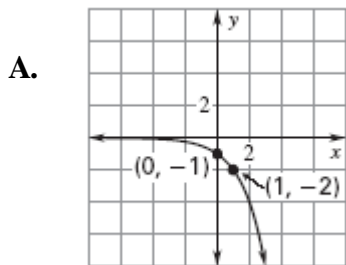
2. $f(x) = -2^x$

3. $f(x) = 4(2^x)$

4. $f(x) = \frac{1}{2}(2^x)$

5. $f(x) = -\frac{1}{2}(2^x)$

6. $f(x) = -4(2^x)$



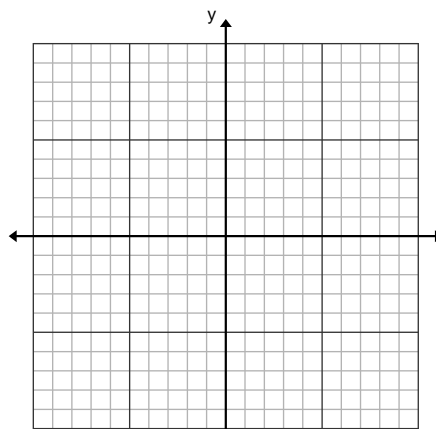
Graph each function. Label two points.

7. $f(x) = 2^x + 2$

Domain:

Range:

Parent function and transformations:

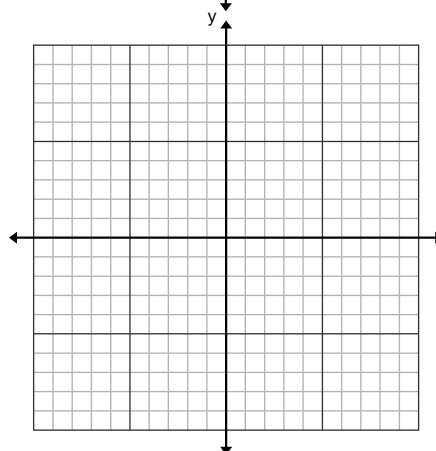


8. $f(x) = 3^{x-1}$

Domain:

Range:

Parent function and transformations:

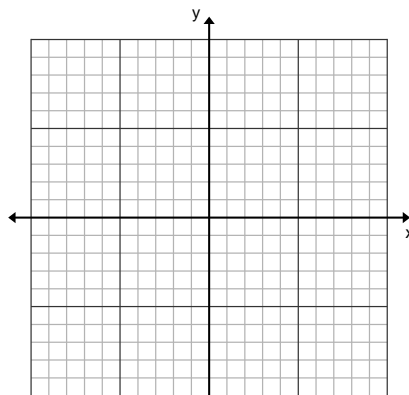


9. $f(x) = 2^{x-2} - 1$

Domain:

Range:

Parent function and transformations:

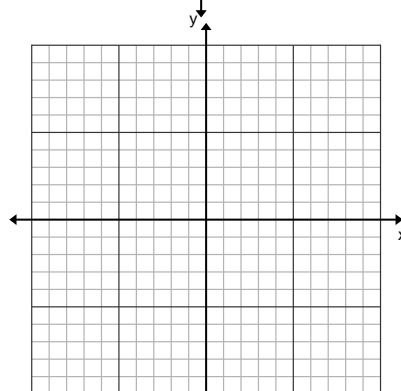


10. $f(x) = -2^{x+1} - 3$

Domain:

Range:

Parent function and transformations:

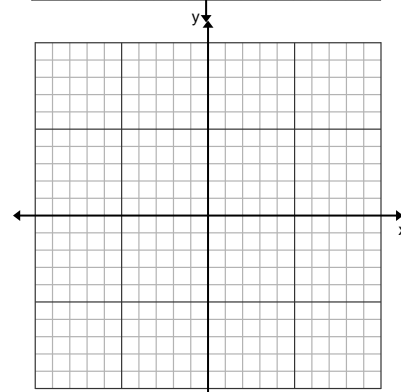


11. $f(x) = -(3^{x+1}) + 2$

Domain:

Range:

Parent function and transformations:

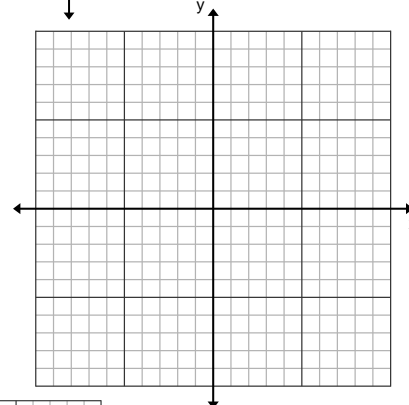


12. $f(x) = \left(\frac{1}{2}\right)^x - 3$

Domain:

Range:

Parent function and transformations:

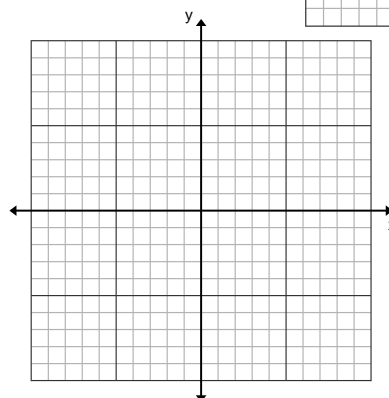


13. $f(x) = 3\left(\frac{1}{2}\right)^{x-2} + 1$

Domain:

Range:

Parent function and transformations:



- 14.** A cup of green tea contains 35 milligrams of caffeine. The average teen can eliminate approximately 12.5% of the caffeine from their system per hour.
- Write an exponential function to represent the amount of caffeine remaining after drinking a cup of green tea.
 - Estimate the amount of caffeine in a teenager's body 3 hours after drinking a cup of green tea.
- 15.** From 1990 to 2000, the population of California can be modeled by $P = 29,816,591(1.0128)^t$ where t is the number of years since 1990. Estimate the population in 2007.
- 16.** You buy a new car for \$22,500. The value of the car decreases by 25% each year. Write an exponential decay model giving the car's value V (in dollars) after t years. What is the value of the car after three years?
- 17.** A virus spreads through a network of computers such that each minute, 25% more computers are infected. If the virus began at only one computer, find the model for this situation and find the number of computers affected after 40 minutes.