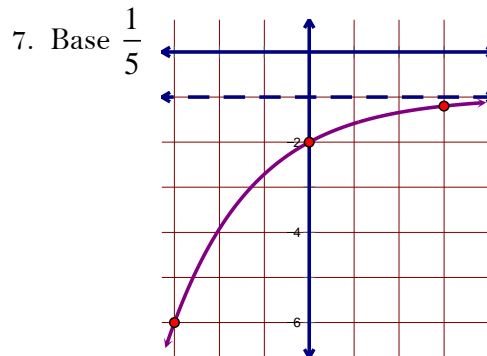
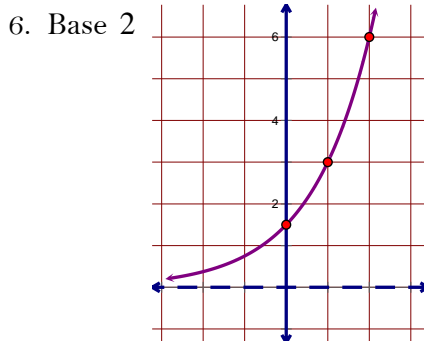
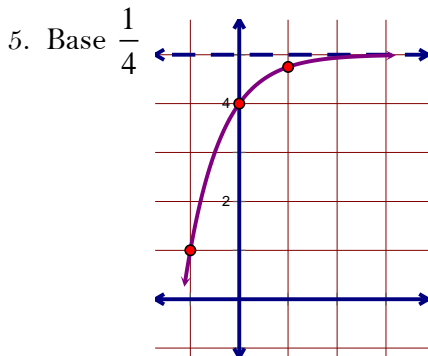


Find the missing terms of the geometric sequence.

1. \_\_, 27, 9, 3, ...      2. 6, 4, \_\_,  $\frac{16}{9}$ , ...      3. 1, 10, 100, \_\_, ...      4.  $\frac{1}{2}$ ,  $-\frac{1}{8}$ ,  $\frac{1}{32}$ , \_\_, ...

Write the equation for each transformed exponential function.



Sketch a complete graph.

8.  $a(x) = \left(\frac{1}{3}\right)^x - 5$       9.  $b(x) = 6(3)^{-x}$       10.  $c(x) = \left(\frac{1}{10}\right)^{x+4} - 3$       11.  $d(x) = 4^{\frac{x}{3}} - 1$   
12.  $f(x) = -2(3)^x + 4$       13.  $g(x) = 2^{2(x-1)} + 6$

Simplify.

14.  $(-5)^{-3}$       15.  $-5^2$       16.  $-\left(\frac{5}{6}\right)^{-2}$       17.  $\left(\frac{2}{3}\right)^{-5}$       18.  $(8b^{-6})(-15b^{-14}c^0)$   
19.  $\frac{-88a^{10}b^{-4}}{-8a^3b^5}$       20.  $\left(\frac{40a^{-2}}{-12a^6}\right)^{-3}$       21.  $\sqrt{512x^7y^{20}z}$       22.  $\sqrt[4]{96a^5b^{22}c^{15}}$       23.  $\sqrt[3]{108m^{10}n^{50}p^{100}}$

Rewrite in exponential or radical form.

24.  $\sqrt[7]{n}$       25.  $\sqrt[5]{x^6}$       26.  $(\sqrt[7]{x})^3$       27.  $x^{\frac{4}{5}}$       28.  $y^{\frac{1}{9}}$

Solve for  $x$ .

29.  $4^x = 8^3$       30.  $27^{2x+1} = 81^x$       31.  $2^x = \frac{1}{64}$       32.  $\sqrt{x^3} = 27$       33.  $x^{\frac{5}{6}} = 7$       34.  $\sqrt[8]{x^5} = 12.75$

35. A new truck costs \$25,000 and loses 8.4% of its value each year. How much will the truck be worth in 3 years?

36. Find the equation of the exponential function that passes through the points (5, 9.6) and (9, 153.6).

37. An investment service promises to triple your money in 12 years. If you have \$1000 to invest, what is the annual interest rate?

38. A certain substance has a half-life of 8 years. What is the decay rate for this substance?

39. Dave bought a new car! After 1 year, his car was worth \$7680 and after 3 years it was worth \$7077.89. How much did he originally pay for the car? What is the rate of depreciation?