

Graph the following:

1. $y = -2 + 3 \csc(2x - \pi)$

2. $y = \log_3(x - 2) + \frac{1}{2}$

3. $y = 3 \cos(x + \pi)$

4. $y = \frac{1}{4} \cot\left(x + \frac{\pi}{4}\right) + \frac{3}{4}$

5. $y = \frac{1}{2} \sec\left(x + \frac{\pi}{2}\right) + 2$

6. $y = 2 \sin\left(2x + \frac{\pi}{2}\right) + 1$

Algebraically determine if the function is even, odd, neither.

7. $f(x) = \frac{|x|^2}{2x}$

8. $f(x) = x^3$

9. Graph $g(x) =$

$$\begin{cases} x^3 + 1 & x < 1 \\ 3x - 1 & 1 \leq x \leq 2 \\ \sqrt{2x - 3} + 3 & x > 2 \end{cases}$$

10. The population of Baconburg starts off at 20,000, and grows by 13% each year. Write an exponential growth model and find the population after 10 years.

11. If a person takes A milligrams of a drug at time 0, then $y = A(0.7)^t$ gives the concentration left in the bloodstream after t hours. If the initial dose is 125 mg, what is the concentration of the drug in the bloodstream after 3 hours?

Find f^{-1} and verify that: $(f \circ f^{-1})(x) = (f^{-1} \circ f)(x) = x$. Find domain and range. Is the function one-to-one?

12. $\frac{2x+1}{x+3}$

13. $\frac{1}{x^3}$

14. Solve for x . Provide the exact answer. $2 = -4 \cdot e^{x+2} + 5$

Note: Know how to find slope from two points.

15. Solve for y : $\ln(y - 1) - \ln 2 = x + \ln x$

16. Solve for x in the indicated interval: $\sin x = \frac{\sqrt{2}}{2}$; $0 \leq x \leq 2\pi$