

4.2 WS

Evaluate the exponential function for the given x values.

1. $f(x) = 3^x$ a. $x = 0$ b. $x = 4$ 2. $g(x) = 10^x$ a. $x = -3$ b. $x = 2$

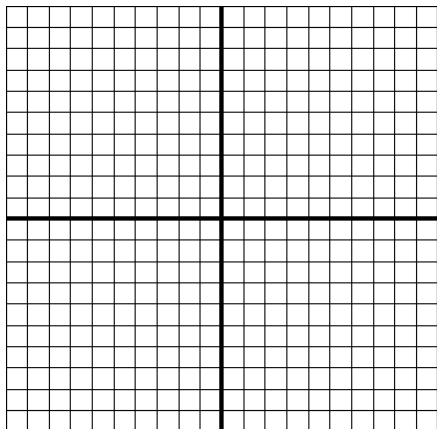
3. $f(x) = \left(\frac{5}{3}\right)^x$ a. $x = 3$ b. $x = -2$ 4. $g(x) = \left(\frac{1}{2}\right)^x$ a. $x = -2$ b. $x = 4$

Use a calculator to evaluate the exponential function for the given x value. Round to the nearest hundredth.

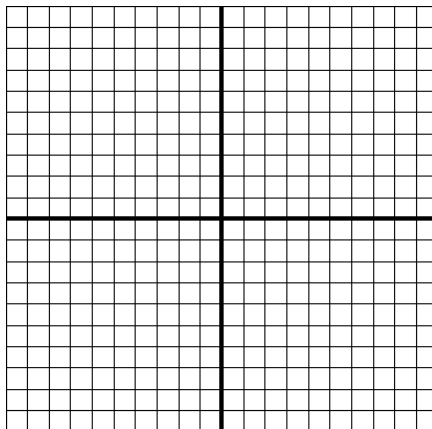
5. $f(x) = 2^x; x = 3.2$ 6. $h(x) = e^x; x = -3$ 7. $g(x) = 3.5^x; x = \sqrt{3}$

Sketch the graph of each function.

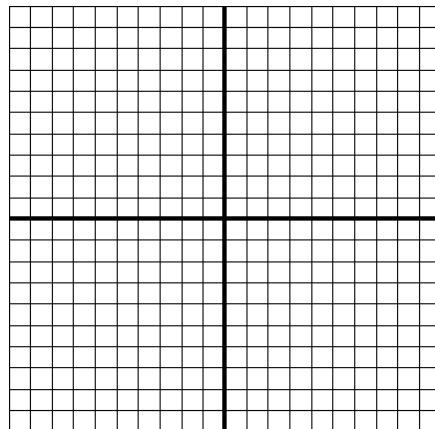
8. $f(x) = 3^x$



9. $g(x) = \left(\frac{3}{2}\right)^x$



10. $h(x) = 6^x$



Explain how to use the graph of the first function f to produce the graph of the second function F .

11. $f(x) = 2^x; F(x) = 2^x + 3$

12. $f(x) = 4^x; F(x) = 4^{x+2}$

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

14. $f(x) = \left(\frac{1}{3}\right)^x; F(x) = 3\left(\frac{1}{3}\right)^x$

Use the composition of functions to determine whether f and g are inverses of one another.

15. $f(x) = 4 - \frac{3}{2}x$; $g(x) = \frac{1}{2}x + \frac{3}{2}$

16. $f(x) = \frac{-16+x}{4}$; $g(x) = 4x+16$

17. $f(x) = -\frac{2}{x} - 1$; $g(x) = -\frac{2}{x+1}$

18. $f(x) = -(x+1)^3$; $g(x) = 3+x^3$

Find the inverse of each function, then state the domain and range of $f^{-1}(x)$.

19. $f(x) = -3x+11$

20. $f(x) = \sqrt{4-x}$

21. $f(x) = \frac{x}{x+5}$