

Inverses of Logarithms

Find the inverse of each function.

1) $y = \log_x 3$

2) $y = \log_6 3^x$

3) $y = \log_2 x^3$

4) $y = \log_5 (-2x)$

5) $y = \log_6 (3x)$

6) $y = \log_4 x + 10$

7) $y = \log_2 x + 6$

8) $y = \log_6 x - 7$

9) $y = \log_x 2 - 6$

10) $y = 4\log_x 2$

11) $y = \log_5 (x + 5)$

12) $y = -6\log_x 5$

$$13) y = 10^{\frac{x}{2}}$$

$$14) y = 4^{\frac{x}{3}}$$

$$15) y = 3^x + 4$$

$$16) y = x$$

$$17) y = 4^{\frac{x}{2}}$$

$$18) y = 6^x + 2$$

$$19) y = \left(\frac{\left(\frac{1}{4} \right)^x - 5}{-2} \right)^{\frac{1}{3}}$$

$$20) y = \left(\frac{5^x - 9}{-3} \right)^{\frac{1}{2}}$$

$$21) y = \left(\frac{4^x - 3}{4} \right)^{\frac{1}{4}}$$

$$22) y = \left(\frac{e^x - 10}{4} \right)^{\frac{1}{5}}$$

$$23) y = \left(\frac{6^x + 10}{-2} \right)^{\frac{1}{3}}$$

$$24) y = \left(\frac{5^x + 8}{4} \right)^{\frac{1}{3}}$$

Inverses of Logarithms

Find the inverse of each function.

1) $y = \log_x 3$

$$y = 3^{\frac{2}{x}}$$

2) $y = \log_6 3^x$

$$y = \log_3 6^x$$

3) $y = \log_2 x^3$

$$y = 2^{\frac{x}{3}}$$

4) $y = \log_5 (-2x)$

$$y = -\frac{5^x}{2}$$

5) $y = \log_6 (3x)$

$$y = \frac{6^x}{3}$$

6) $y = \log_4 x + 10$

$$y = 4^{x-10}$$

7) $y = \log_2 x + 6$

$$y = 2^{x-6}$$

8) $y = \log_6 x - 7$

$$y = 6^{x+7}$$

9) $y = \log_x 2 - 6$

$$y = 2^{\frac{1}{x+6}}$$

10) $y = 4 \log_x 2$

$$y = 2^{\frac{4}{x}}$$

11) $y = \log_5 (x + 5)$

$$y = 5^x - 5$$

12) $y = -6 \log_x 5$

$$y = 5^{-\frac{6}{x}}$$

$$13) y = 10^{\frac{x}{2}}$$

$$y = \log x^2$$

$$14) y = 4^{\frac{x}{3}}$$

$$y = \log_4 x^3$$

$$15) y = 3^x + 4$$

$$y = \log_3 (x - 4)$$

$$16) y = x$$

$$y = x$$

$$17) y = 4^{\frac{x}{2}}$$

$$y = \log_4 x^2$$

$$18) y = 6^x + 2$$

$$y = \log_6 (x - 2)$$

$$19) y = \left(\frac{\left(\frac{1}{4} \right)^x - 5}{-2} \right)^{\frac{1}{3}}$$

$$y = \log_{\frac{1}{4}} (-2x^3 + 5)$$

$$20) y = \left(\frac{5^x - 9}{-3} \right)^{\frac{1}{2}}$$

$$y = \log_5 (-3x^2 + 9)$$

$$21) y = \left(\frac{4^x - 3}{4} \right)^{\frac{1}{4}}$$

$$y = \log_4 (4x^4 + 3)$$

$$22) y = \left(\frac{e^x - 10}{4} \right)^{\frac{1}{5}}$$

$$y = \ln (4x^5 + 10)$$

$$23) y = \left(\frac{6^x + 10}{-2} \right)^{\frac{1}{3}}$$

$$y = \log_6 (-2x^3 - 10)$$

$$24) y = \left(\frac{5^x + 8}{4} \right)^{\frac{1}{3}}$$

$$y = \log_5 (4x^3 - 8)$$