

Ch. 8 PreTest

Write the function in the form $y = ab^x$:

① $y = \sqrt{5 \cdot 2^{3x}}$

Graph the function. Then state the domain & range.

② $y = 7^{x-5} - 2$ (Label your points!)

③ $y = 8(2^{x-3}) - 3$

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

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

⑥ Find $f(x)$ if $f(0) = \frac{8}{3}$ and $f(3) = \frac{1}{81}$.

⑦ You deposit \$8000 in an account that pays 6.5% annual interest compounded quarterly. What is the balance after 2 years? How about if it were compounded continuously?

⑧ Rewrite in exponential form: $\log_8 2 = \frac{1}{3}$

Evaluate the expression without using a calculator:

⑨ $\log_{16} 8$

⑩ $\log \frac{1}{1000}$

Solve each equation:

⑪ $\log_9 x = \frac{3}{2}$

⑫ $\log x \frac{1}{4} = \frac{-2}{3}$

Find the inverse of the function:

(13) $f(x) = \log_4 x$ (14) $f(x) = \log(3x+2)$ (15) $f(x) = \ln(x-2)$

Graph the function:

(16) $f(x) = \log_3(x+2)$ (17) $f(x) = \log_3(x+2) - 1$

Expand the expression:

(18) $\log_4 \frac{2xy}{z}$ (19) $\log \frac{\sqrt{x}}{y}$ (20) $\log(3xyz^3)$ (21) $\ln \frac{x}{yz}$

Condense the expression:

(22) $\log 3 - \log 4 - \log 7$ (23) $\log_2(x-4) + 5 \log_2(x+1) - 3 \log_2$

Use the Change of Base Formula to rewrite the function into a \log and a natural log.
Common

(24) $y = \log_2(x-1) + 3$

Suppose $\log_b 3 = p$ and $\log_b 5 = q$. Express each quantity in terms of p and q .

(25) $\log_b 25$ (26) $\log_b \sqrt{3}$

Solve, Round to 3 decimal places if necessary.

(27) $2^{3x+1} = 4$ (28) $e^{x^2+1} = e^{x+3}$ (29) $\log_2 x + \log_2(x-2) - \log_2(1)$

(30) $\ln(6x+5) = 7$ (31) $\log(x^2-1) = \log(x+5)$

(32) $5^{x^2} = 125$ (33) $\log_x 2 + \log_x 3 = 5$