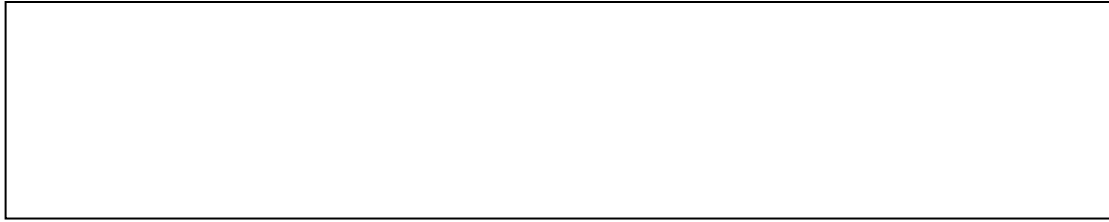


Logarithmic Functions



Example 1:

Write the exponential equations in logarithmic form.

a. $2^4 = 16$

b. $2^{-1} = \frac{1}{2}$

Example 2:

Write the logarithmic equations in exponential form.

a. $\log_3 9 = 2$

b. $\log_6 1 = 0$

c. $\log_5 \left(\frac{1}{25} \right) = -2$

Example 3:

Evaluate the expression.

a. $\log_4 64$

b. $\log_5 5$

c. $\log_2 0.125$

d. $\log_7 1$

e. $\log_{32} 2$

f. $\log_{\frac{1}{4}} 256$

Special Logarithmic Values

Example 4:

Evaluate using a calculator.

a. $\log 7$

b. $\ln 0.25$

Example 5:

Evaluate the following using your calculator.

a. $\log_4 8$

b. $\log_7 21$

Example 6:

Solve the following:

a. $3^x = 12$

b. $10^x + 3 = 23$

c. $e^x = 41$

d. $7^{x+2} = 282$

e. $\log_4 38 = x$

f. $\log_{12} 870 = x + 2$