Homework -- Section 5.2 -- Logarithms

The $\log_a(x)$ is "the power(exponent) to which you raise a to get x"
Every logarithmic equation $y = \log_a(x)$ has an equivalent exponential equation $x = a^y$ provided $0 < a \neq 1$

01. Evaluate each of the logarithmic expressions without using a calculator:

a) $\log_2(128) =$

b) $\log_{10}(100) =$

c) $\log_5(25) =$

d) $\log_4(3) =$

e) $\log_4(4) =$

f) $\log_4(5) =$

02. What is another way to write "$\log_{10}(x)$" ?

What is another way to write "$\log_e(x)$" ?

03. Convert each logarithmic equation to the equivalent exponential equation:

a) $\log_4(64) = 3$

b) $\log_3(81) = 4$

c) $\log_{36}(6) = \frac{1}{2}$

d) $\log_6\left(\frac{1}{36}\right) = -2$

e) $\log(100) = 2$

f) $\ln(10) = 2.302\ldots.$

04. Convert each exponential equation to the equivalent logarithmic equation:

a) $5^3 = 125$

b) $8^2 = 64$

c) $81^{\frac{1}{4}} = 3$

d) $4^{-3} = \frac{1}{64}$

e) $e^3 = 20.0855\ldots\ldots$

f) $e^{3x} = 15$