Lesson 3: Introduction to Logarithms

Question #1

Reference Q.18029
Evaluate $\log(0)$.

Question #2

Reference Q.18030
Evaluate $\log(10)$.

Question #3

Reference Q.18031
Evaluate $\ln(e)$.

Question #4

Reference Q.18032
Evaluate $\ln(7)$ using a calculator.

Question #5

Reference Q.18033
Evaluate $\log_7(0.17)$ using a calculator.

Question #6

Reference Q.18034
Evaluate $\ln(-2)$ using a calculator.

Question #7

Reference Q.18035
When is $\ln(x)$ not defined?

Question #8

Reference Q.11370
Express in logarithmic form:

a. $6^2 = 36$

b. $16^{\frac{1}{4}} = 2$

c. $5^{-2} = 0.04$

d. $4^{6x} = y - 2$

Question #9

Reference Q.11371
Express in exponential form:

a. $\log_4 16 = 2$

b. $\log_8 2 = \frac{1}{3}$

c. $\log 10,000 = 4$

d. $\log_2(y + 10) = 0.2x$

Question #10

Reference Q.11372
Use the change of base rule to solve:
$\log_3 6 = x$

Question #11

Reference Q.11374
Use the change of base rule to solve:
$\log_2(0.5) = x$

Question #12

Reference Q.11375
Solve $\log_{0.2}(11) = x$

Question #13

Reference Q.11376
Solve $\log_{1.1}\left(\frac{1}{3}\right) = x$

Question #14

Reference Q.11377
Solve $\log_{0.6}\left(\frac{1}{4}\right) = x.$

Question #15

Reference Q.18028

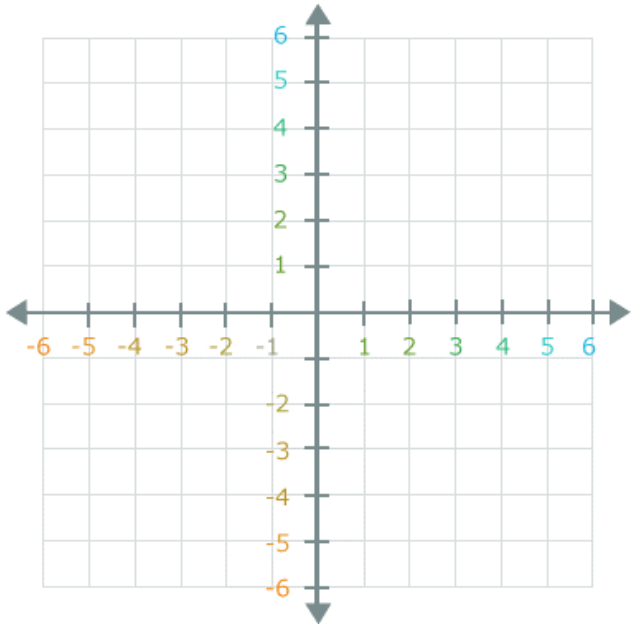
Let $y = 2^x$

a. Fill in the following tables:

x	y
-2	
-1	
0	
1	
2	

x	y^{-1}
-2	
-1	
0	
1	
2	

b. Sketch both y and y^{-1} on the same grid provided below:



c. Show that the inverse of $y = 2^x$ is $y^{-1} = \log_2 x$.

Question #16

Reference Q.11378

Solve using the inverse property:

$2^{3x} = 1$

Question #17

Reference Q.11382

Solve using the inverse property:

$0.2^{5x} = 6.8$

Question #18

Reference Q.11384

Solve using the inverse property

$\frac{1}{2}^{0.8x} = \frac{2}{3}$

Question #19

Reference Q.11386

Solve using the inverse property

$1.3^{-3x} = -7.6$

Question #20

Reference Q.11387

Solve using the inverse property.

$2.8^{-0.2x} = 10$

Question #21

Reference Q.18036

Show that $\ln e^{\log_e 7^2} = 2 \ln 7$.

Question #22

Reference Q.18037

Show that the solution to the equation $5^{x-3} = 40$ can be written as $\frac{\log 5000}{\log 5}$.