Practice for Quiz 1

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MoWeFri 1:00 - 1:50

Practice 4-2: Logarithms

Question 11

Simplify $\log_2 5 + \log_2 3$

Recall that the sum of two logs with the same base is the log of the product of the arguments.

Therefore, $\log_2 5 + \log_2 3 = \log_2 15$

Question 12

Re-write $\log_3(x^q)$ without exponentiation

$q * \log_3(x)$

Question 13

Re-write $\log_4 x$ using base-3 logs instead of base 4.

$\log_4 x = \frac{\log_3 x}{\log_3 4}$

Question 14

Fill in the blank: $\log_4 9 = \log_2 blank$

$\log_4 9 = \frac{log_2 9}{log_2 4}$

$\log_4 9 = \frac{\log_2 9}{2}$

$\log_4 9 = \log_2 \sqrt{9}$

$\log_4 9 = \log_2 3$

Question 15

Simplify $\log_5(24) - \log_5(4)$

$\log_5(24) - \log_5(4) = \log_5(\frac{24}{4})$

$\log_5(\frac{24}{4}) = \log_5(6)$

Question 16

Re-write $\log_{10}(x^7)$ without exponentiation

$7 * \log_{10}(x)$

Question 17

Skip too easy

Question 18

Fill in the blank: $\log_9(4) = \log_3(blank)$

$\log_9(4) = \frac{\log_3(4)}{\log_3(9)}$

$\log_9(4) = \frac{\log_3(4)}{2}$

$\log_9(4) = \log_3(\sqrt{4})$

$\log_9(4) = \log_3(2)$

Blank $= 2$

Question 19

Simplify $\log_2 5 + \log_2 3$

$\log_2 5 + \log_2 3 = \log_2(5 * 3)$

$\log_2(5 * 3) = \log_2(15)$

Question 27

Re-write $\log_2 16x^3$ with no constants or operators in a *logs* argument.

$\log_2 16x^3 = \log_2 16 + \log_2 x^3$

$4 + 3\log_2 x$

Question 28

What is $\log_3 5 * \log_5 3$?

$\log_3 5 * \log_5 3 = \frac{\log_5 5}{\log_5 3} * \frac{\log_5 3}{\log_5 5}$

$\log_3 5 * \log_5 3 = \frac{1}{\log_5 3} * \frac{\log_5 3}{1}$

$\log_3 5 * \log_5 3 = 1$