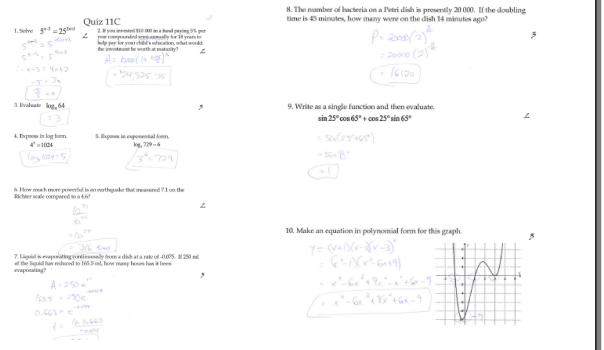
Log Laws II (8.3)

p400 day 4

music quiz

Take up quiz 11



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14. Abdi incorrectly states, "A noise of 20 dB is twice as loud as a noise of 10 dB." Explain the error in Abdi's reasoning.

p400 day 4

12a, 14

10 dB 10^1

20 dB 10^2

50 dB 10^5

7. Decide whether each e
false. Justify your answ
y are positive real num

a) $\frac{\log_c x}{\log_c y} = \log_c x - \log$

b) **8.** If $\log 3 = P$ and $\log 5$
algebraic expression i

c) for each of the followi

a) $\log \frac{3}{5}$

b) $\log 15$

c) $\log 3\sqrt{5}$

d) $\log \frac{25}{9}$

b) $\frac{\log_3 x}{2} - 2\log_3 y$

c) $\log_c x - \frac{1}{5}(\log_c x + 2\log_c y)$

Log Laws II (8.3)

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ex1: Evaluate and

$\log_2 32^2$

$= \log_2 (2^5)^2$

$= \log_2 2^{10}$

$= 10$

$2\log_2 32$

$= 2 \cdot 5$

$= 10$

The third Log Law: $\log A^n = n \log A$

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ex2: Evaluate

$\log_3 27$ $27^{\frac{1}{3}}$ $\sqrt[3]{27} = 3$

$\log_2 8^{25}$

$= 25 \cdot \log_2 8$

$= 25 \cdot 3$

$= 75$

$\log_3 \sqrt[3]{9}$

$= \log_3 9^{\frac{1}{3}}$

$= \frac{1}{3}\log_3 9$

$= \frac{1}{3}(2)$

$= \frac{2}{3}$

$\log_{27} 3^5$

$= 5\log_{27} 3$

$= 5\left(\frac{1}{3}\right)$

$= \frac{5}{3}$

2bc

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a) $3\log_5 10 - \frac{1}{2}\log_5 64$

$= \log_5 10^3 - \log_5 64^{\frac{1}{2}}$

$= \log_5 \frac{1000}{8}$

$= \log_5 125$

$= 3$

$\log_3(27\sqrt{3})$

$= \log_3(3^3 \cdot 3^{\frac{1}{2}})$

$= \log_3 3^{3.5}$

$= 3.5 \log_3 3$

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ex3: If $\log_2 5 = a$, express $\log_2 40$ in terms of a.

$\log_2 40$

$= \log_2(5 \cdot 8)$

$= \log_2 5 + \log_2 8$

$1 = a + 3$

9b

Log Laws II (8.3) p400 day 4

ex4: Evaluate $\log_4 6 + \log_4 \frac{64}{3} - \log_4 8$

$= \log_4\left(\frac{6 \cdot 64}{8 \cdot 3}\right)$

$= \log_4 16$

$= 2$

Log Laws II (8.3) p400 day 4

ex5: Write as a single logarithm

$\log A - 3\log B + 5\log \sqrt[5]{C}$

$= \log A - \log B^3 + \log\left(C^{\frac{1}{5}}\right)^5$

$= \log A - \log B^3 + \log C$

$= \log\left(\frac{AC}{B^3}\right)$

$\log a^2 - 5\log a$

$= \log a^2 - \log a^5$

$= \log\left(\frac{a^2}{a^5}\right)$

$= \log\left(\frac{1}{a^3}\right)$

$\log a^{-3} \quad -3\log a$

Log Laws II (8.3) p400 day 4

ex6: Simplify $\ln x^2 + \ln x - \frac{5\ln x}{2}$

$= \ln x^2 + \ln x - \ln x^{\frac{5}{2}}$

$= \ln\left(\frac{x^2 \cdot x}{x^{\frac{5}{2}}}\right)$

$= \ln\left(\frac{x^3}{x^{2.5}}\right)$

$= \ln x^{0.5}$

$= \frac{1}{2}\ln x$

$\ln x = \log_e x$

In

ln

10a, 11a

11a) $\log_2(x^2-25) - \log_2(3x-15)$

$= \log_2\left(\frac{x^2-25}{3x-15}\right)$

$= \log_2\left(\frac{(x+5)(x-5)}{3(x-5)}\right)$

$= \log_2\left(\frac{x+5}{3}\right)$

$3x-15 > 0$

$3x > 15$

$x > 5$

$x^2 - 25 > 0$

$x^2 > 25$

$x > 5$

$x < -5$

Log Laws II (8.3) p400 day 4

hw: p400#10b, 11b, 12c, 16

Log Laws II (8.3) p400 day 4

Assignment 5

make some food

write up 1/2 page - 1 page

how math from 621B was used in making the food

be specific, use examples

show me math

bring enough for 6 people

due Monday Dec 16

food allergies? Halal?