

## Algebra II Homework #20

- 1) Graph:  $y = 2^{2-x}$
- 2) Write  $\sqrt[6]{a^7} \cdot \sqrt[9]{a^5}$  as a single radical.
- 3) Expand:  $\ln\left(\frac{a^4}{x^6 y}\right)$
- 4) Simplify:  $\frac{\sqrt[3]{16}}{\sqrt[3]{9}}$
- 5) Simplify:  $\frac{2}{7} \log_c x - 3 \log_c y - \frac{1}{2} \log_c a$
- 6) Solve:  $5^x = 7$
- 7) Simplify:  $\log_3 81$
- 8) Solve:  $16^x = 32^{x-2}$
- 9) Solve:  $\log(x+3) + \log(x-2) = \log(2x+24)$
- 10) Solve:  $9^{x-2} = 6$
- 11) Simplify:  $\ln e^3$
- 12) Solve:  $81^{x-2} = 27^{3x+1}$
- 13) Solve:  $\log_4(5x-1) = 2$
- 14) Solve:  $5 = 10^{4x+1}$
- 15) Simplify:  $\log 100$
- 16) Solve:  $25^{x-3} = \left(\frac{1}{125}\right)^{4x+5}$
- 17) Solve:  $\ln(2x+3) = \ln(8x+8) - \ln(3x-4)$
- 18) Solve:  $14 = 7^x$
- 19) Simplify:  $\log .001$
- 20) Solve:  $\log(5x+26) = \log(5x-3) + \log(2x-4)$

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