## Advanced Math

3-3

Laws of Logarithms

The answer to a logarithm is $\qquad$ .

| Laws of Exponents | Laws of Logarithms - |
| :--- | :--- |
| 1) $x^{m} x^{n}=$ | $1)$ |
| 2) $\frac{x^{m}}{x^{n}}=$ | $2)$ |
| 3$)\left(x^{m}\right)^{n}=$ | $3)$ |

Evaluate the logarithm. Round to three decimal places.
11) $\log _{3} 7$

Use laws of logarithms to write the expression as a sum, difference, and/or constant multiple of logarithms.
31) $\ln z(z-1)^{2}, z>1$

Express as a logarithm of a single number or expression.
49) $\ln x-3 \ln (x+1)$

Find the exact value of the logarithm if possible without a calculator.
75) $\log _{5} 75-\log _{5} 3$

Assignment: pg 325

12-38 even,
42-60 even, 70-82 even.

