

Name \_\_\_\_\_

Homework 21  
Sections 5.3 & 5.4

1. (2) Write the following exponential expressions as an equivalent logarithmic expression.

a)  $10^n = 356$

b)  $7^q = \frac{M}{3}$

2. (2) Write the following logarithmic expressions as an equivalent exponential expression.

a)  $\log_c(2p) = 4$

b)  $\ln 56 = K^2$

3. (4) Expand the logarithm  $\log_2\left(\frac{5A^3}{MN}\right)$  completely.

4. (4) Write the expression  $\log_5 x - 2\log_5 y + \log_5 z$  in the form  $\log_b P$ .

5. (3) What is the domain of the function  $f(x) = \frac{1}{3}\log_3(2\sqrt{2x-10})$ ?

6. (2ea) Use  $\log_b 2 = M$ ,  $\log_b 3 = N$ ,  $\log_b 5 = P$  and the properties of logs to evaluate the following expressions.

(a)  $\log_b 15$

(b)  $\log_b 8$

(c)  $b^{2P}$