

Pre Calc BC**Logs**

Name _____

1. Express as a single log

a) $\frac{1}{2}\log x + 4\log y - 3\log x$

b) $\ln \frac{e}{\sqrt{x}} - \ln \sqrt{e^3 x}$

2. Given that $\log(m) = a$, and $\log(n) = b$ express each of these in terms of a and b

a) $\log \frac{m}{n}$

b) $\log(10m)$

c) $\log \sqrt{\frac{m^5}{1000}}$

d) $\log(.01m \cdot 1000^b)$

3. Solve the equations below algebraically.

a) $\log_5 x = 4$

b) $\log_2(10 + 3x) = 5$

c) $\ln x = -2$

d) $\log(x) + \log(x - 9) = 1$

e) $\log_3(x + 1) + \log_3(x - 1) = 2$

f) $\ln(x + 1) - \ln x = \ln 4$

g) $\ln(\ln x) = 2$

h) $(\log_3 x)^2 - \log_3 x^2 = 3$

i) $\log_3(\log_4 x) = 1$