

Logarithmic Equations

$$\log_{10} X = 1.85 \quad \text{"log roll"}$$
$$10^{1.85} = X$$
$$X \approx 70.79$$

$$\ln_e X = 1.85$$
$$e^{1.85} = X$$
$$X \approx 6.36$$

$$\log X = \underbrace{2.1 + \log 1.7}_{\text{calculator}}$$

$$\log_{10} X = 2.33$$
$$10^{2.33} = X$$

$$X \approx 213.80$$

HW for 9.0B

In 1-3 rewrite so that all products, exponents, and quotients are eliminated.

1) $\log(4x^3)$

2) $\ln\left(\frac{2x}{3}\right)$

3) $\log\left(\frac{4^4}{6}\right)$

In 4-6, rewrite as a single logarithm.

4) $\log X - \log 4 + \log 8$

5) $2 \ln(3x) - \ln 9$

6) $\log(9x) + \log(4x) - 2 \log(6x)$

In 7-10, solve for x

7) $\log X = 0.35$

8) $\ln X + \ln 1.4 = 7$

9) $\log(3x) - \log 1.3 = 2.4$

10) $\ln X = 1.8 - \ln 3.6$