

Logs and Exponents

Exponent Laws:

$$A^{BC} = (A^B)^C$$

$$A^{B+C} = A^B A^C$$

$$A^{1/B} = \text{"Bth root of A"}$$

$$A^{-B} = 1/A^B$$

All Logs are the same:

$$\text{Log}_B(x) = \text{Log}_B(A) \text{Log}_A(x)$$

$$\text{Log}_B(B^x) = B^{\text{Log}_B(x)} = x$$

$$\text{Ln}(e^x) = e^{\text{Ln}(x)} = x$$

$$\text{Specifically: } \text{Ln}(x) = \text{Log}_e(x)$$

Log Laws:

$$\text{Ln}(AB) = \text{Ln}(A) + \text{Ln}(B)$$

$$\text{Ln}(A/B) = \text{Ln}(A) - \text{Ln}(B)$$

$$\text{Ln}(A^c) = c \text{Ln}(A)$$

$$\text{Ln}(e) = 1$$

$$\text{Ln}(1) = 0$$

Just a number:

$$e \approx 2.718281828459045235360287471352662\dots$$

What?

$$\text{Ln}(x) = ? \text{ is the same as the question } e^? = x.$$