

Rules for Logarithms:

Remember, $\log_a b = c$ is read $a^c = b$.

$$1. \log_a (bc) = \log_a b + \log_a c$$

Many people erroneously believe $\log_a bc = (\log_a b)(\log_a c)$ which is **false**.

$$2. \log_a \left[\frac{b}{c} \right] = \log_a b - \log_a c$$

$$3. \log_a b^c = c(\log_a b)$$

$$4. \log_a 1 = 0$$

(The log of 1 over any base = 0. This follows from the fact that $a^0 = 1$.)

$$5. \log_a a = 1$$

(The log of a base over itself = 1. This follows from the fact that $a^1 = a$.)

$$6. \log_a b = \frac{\log b}{\log a}$$

(The above rule is used when there is only a "log" button on the calculator. When the base is omitted, the base is understood to be 10.)

If you need help in understanding these rules or any other rules in mathematics, call Michael Ragusa at **703-691-2730**.

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