

The Laws of Logs

The Multiplication Law

x	y	$\text{Log}_{10}x$	$\text{Log}_{10}y$	$\text{Log}_{10}x + \text{log}_{10}y$	xy	$\text{Log}_{10}xy$
10	1000					
100	10000					
10	100000					
1000	1000000					

Proof

The Division Law

x	y	$\text{Log}_{10}x$	$\text{Log}_{10}y$	$\text{Log}_{10}x - \text{log}_{10}y$	$x \div y$	$\text{Log}_{10}(x \div y)$
10	1000					
100	10000					
10	100000					
1000	1000000					

Proof

The Power Law

x	k	x^k	$\text{Log}_{10}(x^k)$	$\text{Log}_{10}x$	$k\text{Log}_{10}x$
10	4				
16	5				
20	3				
30	2				