Logarithm Properties (H)

	Definition	Example
Power Property (exponent)	$\log(a^m) = m\log(a)$	• $\log(3^x) = x\log(3)$ • $\log(x^5) = 5\log(x)$
Product Property (Add)	$\log(m) + \log(n) = \log(m \cdot n)$	• $\log(6) + \log(5) = \log(30)$ • $\log_3(2) + \log_3(5) = \log_3(10)$
Quotient Property (Subtract)	$\log(m) - \log(n) = \log\left(\frac{m}{n}\right)$	• $\log(12) - \log(3) = \log(4)$ • $\log_{20}(1) - \log_{20}(2) = \log_{20}\left(\frac{1}{2}\right)$
Change of Base	$\log_a(m) = \frac{\log(m)}{\log(a)}$	• $\log_2(30) = \frac{\log(30)}{\log(2)} = 4.91$