Question. *What is an exponent?*

Let A and B be positive real numbers and p any number. For each of the following expressions, find an equivalent expression that only involves $\log A$ and $\log B$.

Question. $\log(A \cdot B) =$

Question. $\log(A/B) =$

Question. $\log(A^p) =$

Question. $\log(1) =$

Question. *Find a way to express* $\log_2(x)$*, the base 2 logarithm using* $\log(x)$*, or the base 10 logarithm.*

Determine whether the following are true:

(1) $\log(10^2 \cdot 10^3) = \log 10^2 + \log 10^3$

(2) $\log(10^5 \cdot 10^{-7}) = \log 10^5 + \log 10^{-7}$

(3) $\log(10^2/10^3) = \log 10^2 - \log 10^3$

(4) $\log(10^3/10^{-3}) = \log 10^3 / \log 10^{-3}$