Project Euler: Problem 99 Writeup

Given a list of bases and exponents, such as 632382^{518061}, determine the largest number. This problem may seem computationally expensive; computing such inequalities with brute-force is practically impossible; however, with some manipulations, the solution to this problem is rather straightforward.

The exponent rule for logarithms is as follows:

$$\log(a^b) = b\log(a) \tag{1}$$

This could be used to simplify computation in this problem. Given two numbers, α, β, where $\alpha > \beta$, it is guaranteed that $\log(\alpha) > \log(\beta)$. Hence, to find the largest value, simply apply the exponent logarithm rule to all values in the list and find the largest.