



LOGS MEME

One day this meme appeared on the internet:

$$\log(1 + 2 + 3) = \log(1) + \log(2) + \log(3)$$

1) Can you explain why this is interesting and why it works?

2) Here is a simplified version of the meme:

$$\log(x + y) = \log(x) + \log(y)$$

Can you find any other solutions to this? These do not need to be integer solutions.

3) Now, can you find any integer solutions to equation above? How many integer solutions are there, and why?