(B3) This solution is gonna be a little long. So I'll skip the explanation way and just present the solution directly.

For starters, we define intelligently some real number K_i based on a positive integer m_i as follows:

Let $K_i = \dfrac{m_i\, 2^{m_i}}{(2^{m_i}-1)}$, where $m_i = i$ for all $i \geq 1$ ~~and~~
and i is an arbitary positive integer.
(e.g. $m_1 = 1$, $m_2 = 2$, $m_3 = 3$ etc..)
In fact we can see that K_i's are actually rational numbers.

Now, note an interesting property of the K_i's.

*Property (1):

Each m_i would produce a unique K_i (because K_i increases as m_i increases across the positive integers), Here's a proof:

We wish to prove that:

$$K_{i+1} > K_i$$

which is equivalent to all the implications below (can be ~~proved~~ Thus its truth implied backwards):

$$\frac{m_{i+1}\cdot 2^{m_{i+1}}}{(2^{m_{i+1}}-1)} > \frac{m_i \cdot 2^{m_i}}{(2^{m_i}-1)}$$

note by definition: $m_{i+1} = i+1 = m_i + 1$
So, for simplicity let $m_i = z$

$$\frac{(z+1)\cdot 2^{z+1}}{(2^{z+1}-1)} > \frac{z\cdot 2^{z}}{(2^{z}-1)}$$

(continued on the next page:)