Lapis lazuli

0.05 second, 64 megabytes

After being reincarnated into a fantasy world, Smith finds himself in a realm brimming with mesmerizing, colorful, and flamboyant magic. He takes on the job of an enchanter, enchanting weapons and tools with unique magic, each having its own effect. His previous work includes, but is not limited to:

Eternal Edge III

Frozen Edge II

Phase Cutter I

Memory of the Maker V

Echoing Strike X

Smith also notices that for each enchantment placed on a tool, the ore becomes beautifully grained with an iridescent variation of lapis lazuli. Enchanted lapis lazuli emits a deep, beautiful blue light during the enchanting process. However, there is a problem—the amount of enchanted lapis lazuli required must be calculated using a very specific formula, which is difficult to compute by hand.

Smith wants you—the Book of Wisdom. Wait... a book? Yes! I almost forgot to mention—you are not here as a programmer but as a magical book called the Book of Wisdom. Smith wants you to calculate the least required amount of lapis lazuli using the formula below.

The formula:

$$5\mathrm{a} \leq \sum_{k=0}^{r} \left\lfloor \frac{(\mathrm{l}+1)^{1+\lfloor \frac{k}{300} \rfloor}}{r} + r \right\rfloor$$

- a = tool magical affinity
- r = the Lapiz lazuli use
- l = enchantment level

  constrain { 10 ≤ a ≤ 1e7, 1 ≤ l ≤ 10 , r ≤ 64-bit int limit}

Lapis lazuli

input:

1st row : tool magical affinity (integer)

2ndrow: enchantment level (integer)

output:

1st row: the first digit of scientific 1.23 x 10^2 -> 1

2ndrow: the power on 10 of scientific 1.23 x 10^2 -> 2

Input	Output
100 5	22

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And about that 0.05 seconds time limit, you use way too much magical energy so you have to work fast