



Problem of the Week

Problem D

One Step at a Time

Sequences of numbers can be generated by following a variety of steps to get from term to the next term.

Our particular sequence begins with first term 2. To obtain the next term in the sequence from the term immediately before it, multiply the preceding term by 3, then add 2 to your result and finally divide by this new result by 3. Repeat this set of steps with each new term to generate more terms in the sequence.

For example, the second term in our sequence would be calculated as follows:

$$2 \Rightarrow \text{multiply by } 3 \Rightarrow 6 \Rightarrow \text{add } 2 \Rightarrow 8 \Rightarrow \text{divide by } 3 \Rightarrow \frac{8}{3}$$

The value of the second term is $\frac{8}{3}$ and the term number is 2.

If you follow the same steps with term 2, you will obtain term 3 whose value is $\frac{10}{3}$.

Determine the value of the 1000th term.

Term Number	1	2	3	1000
Value	2	$\frac{8}{3}$	$\frac{10}{3}$????

