



Problem of the Week

Problem D

One Thousand Inputs

Yeseo has written a program. After she inputs a number into the program the number is multiplied by 3, then 4 is added to the product, then the sum is divided by 3. The final result is then printed.

Yeseo inputs the number 2 into the program. Following the steps outlined, the number 2 is first multiplied by 3 to obtain 6. Then 4 is added to the product to obtain 10. Finally, this sum is divided by 3 to obtain $\frac{10}{3}$. The number $\frac{10}{3}$ is then printed.

Yeseo then inputs the output $\frac{10}{3}$ into the program. If Yeseo continues this process of taking the output number and using it as the next input, then what will be the 1000th number she inputs into the program?

