



*Postscript is a place in the letter that is  
the main one, but pretends to be secondary.*

*Ashot Nadanyan*

## POSTSCRIPT

Mary walks from HOME to MERCH and back every day. Since Merch hasn't arrived yet, Mary's speed to and fro is the same.

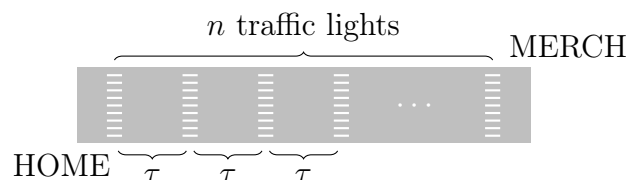
The HOUSE and MERCH points are located on opposite sides of the Path, along which there are  $n$  equidistant traffic lights. It is known that all traffic lights are synchronized, that is, they change color at the same time. The traffic lights are red for the time  $t_r$  and green for the time  $t_g$ .

Mary travels the distance between adjacent traffic lights in time  $\tau$ . It is known that she manages to cover the distance from the first to the last traffic light in a time less than its period, that is,  $\tau(n - 1) < t_r + t_g$ .

Every day, Mary sets off on the Journey at a random time. Mary follows the rules of the road as we advise you to do and does not cross the road on red. At the same time, she always chooses the route on which the waiting time is minimal, and writes this time in her diary to recall totally.

You are invited to Mary's diary. Determine from it:

1. (2,5 points) number of traffic lights  $n$ ,
2. (2,5 points) time  $t_r$  during which traffic lights are red ,
3. (2,5 points) time  $t_g$  during which the traffic lights are green,
4. (2,5 points)  $\tau$  time that Mary walks between the two nearest traffic lights.



You can download Mary's diary in the following formats: [csv](#), [excel](#) and [pdf](#).

First hint — 23.05.2022 14:00 (MSK)

Second hint — 25.05.2022 14:00 (MSK)

The end of the bonus round — 27.05.2022 22:00 (MSK)