

AlphaBit Coding Challenge

Problem 3: Water flow

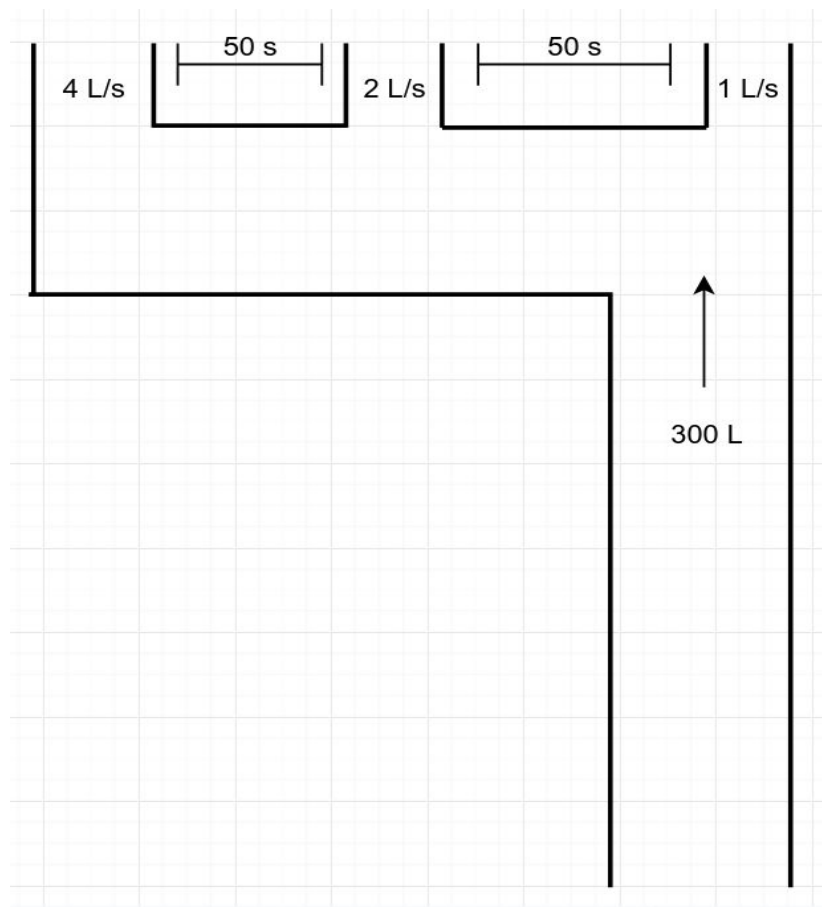
Statement

The school has hosted the legendary event known as the "Triwizard tournament", the champions including Harry are facing a dangerous challenge which consists of diving in a big pool to rescue their mates who are trapped underwater by opening one of the valves.

There are several valves apart from each other, each one has a bandwidth.

It takes a certain amount of time for the water to circulate from one to another.

The clock is ticking. Can you help Harry choose the right valve that can drain the pool in the shortest time possible and save his friends ?



Input

An integer contains the flow.

An integer contains the number of valves.

A sequence of bandwidths for each valve.

A sequence of the delay between the valves.

Output

The number of the valve to open.

Example

Input	Output
300 3 1 2 4 50 50	2