Fast Travel
Input File: fasttravel.txt

You are a hiker walking through the wilderness. You are running out of food and supplies and thus must reach the cabin as quickly as you can. There are multiple different paths; however, the various paths are very different (**dirt path**, **river**, **mountainous trail**, and **swamp**). You travel at different speeds in each of these path types; the corresponding speeds are listed below:

- **Dirt Path:** 5 meters/second
- **River:** 1 m/s
- **Mountainous Trail:** 2 m/s
- **Swamp:** 2.5 m/s

Your job is to find the quickest path (the smallest amount of time it takes to travel to the cabin).

Input:

The first line contains an integer N. Each of the following N test cases contain the width, w, and height, h, of the maze on the first line and the maze itself on the following h lines.

You will be given a rectangular maze (`1 < width, height < 20`) in ASCII characters. The maze will be made up of the following symbols:

- `#` – A border to the maze. Impenetrable. The maze border will be surrounded by this material, not including the starting and ending points.
- `P` – The start to the maze (your starting position).
- `C` – The position of the cabin (the end destination).
- `D` – A dirt path.
- `R` – A river.
- `M` – A mountainous trail.
- `S` – A swamp.

Each of the different path types (`D`, `R`, `M`, and `S`) is 10 meters long per character (so `DDD` is 30 meters of dirt path).

Output:

Output the time it takes to travel to each cabin in seconds, calculated by how many `D`, `R`, `M`, and `S` positions you must cross.

Example Input:

```
2
10 7
##C#######
#RRD###S##
#DRR#SSSS#
#SRS#SDRM#
#RMMMSSDD#
#DRMMDSDD#
#######P##
7 5
###C###
#SRD#S#
#S##RM#
#MRDMD#
####P##
```

Example Output:

```
48
42
```