```cpp
1   #include<iostream>
2   #include<iomanip>
3   using namespace std;
4   int m, n;
5   char a[100][100];
6   void ruin(char (&a)[100][100], int i, int j)
7   {
8       //Block the visited space
9       a[i][j] = '#';
10
11      //Go Down
12      if(a[i+1][j]=='-' && i+1<m)
13      {
14          ruin(a,i+1,j);
15      }
16      //Go Right
17      if(a[i][j+1]=='-' && j+1<n)
18      {
19          ruin(a,i,j+1);
20      }
21      //Go  Up
22      if(a[i-1][j]=='-' && i-1>0)
23      {
24          ruin(a,i-1,j);
25      }
26      //Go Left
27      if(a[i][j-1]=='-' && j-1>0)
28      {
29          ruin(a,i,j-1);
30      }
31      return;
32  }
33
34  int main()
35  {
36      int t,people, rooms;
37      char temp;
38      cin >> t;
39      while(t--)
40      {
41          cin >> m >> n;
42
43          people = 0;
44          rooms = 0;
45          for(int i=0; i<m; i++)
46          {
47              for(int j=0; j<n; j++)
48              {
49                  cin >> temp;
50                  if(temp=='*')
51                  {
52                      people++;
53                      a[i][j] = '-';
54                  }
55                  else
56                      a[i][j]  = temp;
57              }
58          }
59
60          for(int i=1; i<m-1; i++)
61          {
```

```cpp
            for(int j=1; j<n-1; j++)
            {
                if(a[i][j]=='-')
                {
                    rooms++;
                    ruin(a,i,j); //this function blocks visited cells
                }
            }
        }
        cout << fixed << setprecision(2) << (people/(float)rooms) << "\n";
    }
}
```