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--- Day 21: Step Counter ---

You manage to catch the airship right as it's dropping someone else off on
their all-expenses-paid trip to Desert Island! It even helpfully drops you
off near the gardener and his massive farm.

"You got the sand flowing again! Great work! Now we just need to wait until
we have enough sand to filter the water for Snow Island and we'll have snow
again in no time."

While you wait, one of the Elves that works with the gardener heard how
good you are at solving problems and would like your help. He needs to get
his steps in for the day, and so he'd like to know which garden plots he
can reach with exactly his remaining 64 steps.

He gives you an up-to-date map (your puzzle input) of his starting position
(S), garden plots (.), and rocks (#). For example:

```
...........
.....###.#.
.###.##..#.
..#.#...#..
....#.#....
.##..S####.
.##..#...#.
.......##..
.##.#.####.
.##..##.##.
...........
```

The Elf starts at the starting position (S) which also counts as a garden
plot. Then, he can take one step north, south, east, or west, but only onto
tiles that are garden plots. This would allow him to reach any of the tiles
marked O:

```
...........
.....###.#.
.###.##..#.
..#.#...#..
....#O#....
.##.OS####.
.##..#...#.
.......##..
.##.#.####.
.##..##.##.
...........
```

Then, he takes a second step. Since at this point he could be at either
tile marked O, his second step would allow him to reach any garden plot
that is one step north, south, east, or west of any tile that he could have
reached after the first step:

```
...........
.....###.#.
.###.##..#.
..#.#O..#..
....#.#....
.##O.O####.
.##.O#...#.
.......##..
.##.#.####.
.##..##.##.
...........
```

After two steps, he could be at any of the tiles marked O above, including
the starting position (either by going north-then-south or by going west-

then-east).

A single third step leads to even more possibilities:

```
...........
.....###.#.
.###.##..#.
..#.#.O.#..
...O#O#....
.##.OS####.
.##O.#...#.
....O..##..
.##.#.####.
.##..##.##.
...........
```

He will continue like this until his steps for the day have been exhausted. After a total of 6 steps, he could reach any of the garden plots marked O:

```
...........
.....###.#.
.###.##.O#.
.O#O#O.O#..
O.O.#.#.O..
.##O.O####.
.##.O#O..#.
.O.O.O.##..
.##.#.####.
.##O.##.##.
...........
```

In this example, if the Elf's goal was to get exactly 6 more steps today, he could use them to reach any of 16 garden plots.

However, the Elf actually needs to get 64 steps today, and the map he's handed you is much larger than the example map.

Starting from the garden plot marked S on your map, how many garden plots could the Elf reach in exactly 64 steps?

To begin, get your puzzle input.

Answer: _____ [Submit]

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