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--- Day 4: Ceres Search ---

"Looks like the Chief's not here. Next!" One of The Historians pulls out a
device and pushes the only button on it. After a brief flash, you recognize
the interior of the Ceres monitoring station!

As the search for the Chief continues, a small Elf who lives on the station
tugs on your shirt; she'd like to know if you could help her with her word
search (your puzzle input). She only has to find one word: XMAS.

This word search allows words to be horizontal, vertical, diagonal, written
backwards, or even overlapping other words. It's a little unusual, though,
as you don't merely need to find one instance of XMAS - you need to find
all of them. Here are a few ways XMAS might appear, where irrelevant
characters have been replaced with .:

```
..X...
.SAMX.
.A..A.
XMAS.S
.X....
```

The actual word search will be full of letters instead. For example:

```
MMMSXXMASM
MSAMXMSMSA
AMXSXMAAMM
MSAMASMSMX
XMASAMXAMM
XXAMMXXAMA
SMSMSASXSS
SAXAMASAAA
MAMMMXMMMM
MXMXAXMASX
```

In this word search, XMAS occurs a total of 18 times; here's the same word
search again, but where letters not involved in any XMAS have been replaced
with .:

```
....XXMAS.
.SAMXMS...
...S..A...
..A.A.MS.X
XMASAMX.MM
X.....XA.A
S.S.S.S.SS
.A.A.A.A.A
..M.M.M.MM
.X.X.XMASX
```

Take a look at the little Elf's word search. How many times does XMAS
appear?

Your puzzle answer was 2571.

--- Part Two ---

The Elf looks quizzically at you. Did you misunderstand the assignment?

Looking for the instructions, you flip over the word search to find that
this isn't actually an XMAS puzzle; it's an X-MAS puzzle in which you're
supposed to find two MAS in the shape of an X. One way to achieve that is
like this:

```
M.S
.A.
M.S
```

Irrelevant characters have again been replaced with . in the above diagram.
Within the X, each MAS can be written forwards or backwards.

Here's the same example from before, but this time all of the X-MASes have
been kept instead:

```
.M.S......
..A..MSMS.
.M.S.MAA..
..A.ASMSM.
.M.S.M....
..........
S.S.S.S.S.
.A.A.A.A..
M.M.M.M.M.
..........
```

In this example, an X-MAS appears 9 times.

Flip the word search from the instructions back over to the word search
side and try again. How many times does an X-MAS appear?

Your puzzle answer was 1992.

Both parts of this puzzle are complete! They provide two gold stars: **

At this point, you should return to your Advent calendar and try another puzzle.

If you still want to see it, you can get your puzzle input.

You can also [Share] this puzzle.