

--- 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
MSAMXMSMA
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 **2662**.

--- 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.ASMMS.
.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 **2034**.

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.

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