--- Day 10: Monitoring Station ---

You fly into the asteroid belt and reach the Ceres monitoring station. The
Elves here have an emergency: they're having trouble tracking all of the
asteroids and can't be sure they're safe.

The Elves would like to build a new monitoring station in a nearby area of
space; they hand you a map of all of the asteroids in that region (your
puzzle input).

The map indicates whether each position is empty (.) or contains an
asteroid (#). The asteroids are much smaller than they appear on the map,
and every asteroid is exactly in the center of its marked position. The
asteroids can be described with X,Y coordinates where X is the distance
from the left edge and Y is the distance from the top edge (so the top-left
corner is 0,0 and the position immediately to its right is 1,0).

Your job is to figure out which asteroid would be the best place to build a
new monitoring station. A monitoring station can detect any asteroid to
which it has direct line of sight - that is, there cannot be another
asteroid exactly between them. This line of sight can be at any angle, not
just lines aligned to the grid or diagonally. The best location is the
asteroid that can detect the largest number of other asteroids.

For example, consider the following map:

```
.#..#
.....
#####
....#
...##
```

The best location for a new monitoring station on this map is the
highlighted asteroid at 3,4 because it can detect 8 asteroids, more than
any other location. (The only asteroid it cannot detect is the one at 1,0;
its view of this asteroid is blocked by the asteroid at 2,2.) All other
asteroids are worse locations; they can detect 7 or fewer other asteroids.
Here is the number of other asteroids a monitoring station on each asteroid
could detect:

```
.7..7
.....
67775
....7
...87
```

Here is an asteroid (#) and some examples of the ways its line of sight
might be blocked. If there were another asteroid at the location of a
capital letter, the locations marked with the corresponding lowercase
letter would be blocked and could not be detected:

```
#.........
...A......
...B..a...
.EDCG....a
..F.c.b...
.....c....
..efd.c.gb
.......c..
....f...c.
...e..d..c
```

Here are some larger examples:

  - Best is 5,8 with 33 other asteroids detected:

```
......#.#.
#..#.#....
..#######.
.#.#.###..
.#..#.....
..#....#.#
#..#....#.
.##.#..###
##...#..#.
.#....####
```

- Best is `1,2` with `35` other asteroids detected:

```
#.#...#.#.
.###....#.
.#....#...
##.#.#.#.#
....#.#.#.
.##..###.#
..#...##..
..##....##
......#...
.####.###.
```

- Best is `6,3` with `41` other asteroids detected:

```
.#..#..###
####.###.#
....###.#.
..###.##.#
##.##.#.#.
....###..#
..#.#..#.#
#..#.#.###
.##...##.#
.....#.#..
```

- Best is `11,13` with `210` other asteroids detected:

```
.#..##.###...#######
##.############..##.
.#.######.########.#
.###.#######.####.#.
#####.##.#.##.###.##
..#####..#.#########
#######################
#.####....###.#.#.##
##.#################
#####.##.###..####..
..######..##.#######
####.##.####...##..#
.#####..#.######.###
##...#.##########...
#.##########.#######
.####.#.###.###.#.##
....##.##.###..#####
.#.#.###########.###
#.#.#.#####.####.###
###.##.####.##.#..##
```

Find the best location for a new monitoring station. How many other asteroids can be detected from that location?

To begin, get your puzzle input.

Answer: [_____] [Submit]

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