Prime crossword puzzle in a cell-matrix

The crossword layout consists of an M*N matrix (M, N<19) which contains integers. The input looks as follows:

```
.  .  .  .  .
.  3  .  .  .
2  *  7  .  3
.  .  .  .  .
.  .  .  .  .
```

In this example, the matrix's dimensions are 5*5. The decimal symbol (.) represents an empty space, which separates the digits. The 3rd row is composed of 2*7, a space, and 3 (this **does not** represent the equation 2*7.3).

The goal of the program is to replace all asterisk characters (*) with an integer (0~9) so that the resulting matrix consists of only prime numbers when read from top to bottom and left to right.

The solution to the above example would be:

```
.  .  .  .  .
.  3  .  .  .
2  7  7  .  3
.  .  .  .  .
.  .  .  .  .
```

The asterisk (*) has been replaced with the number 7.

The first "set" of numbers (from cells 1*1 to 3*3) contains the following prime numbers:

- 3 (left to right, cell 2*2)
- 277 (left to right, cells 3*1 to 3*3)
- 2 (top to bottom, cell 3*1)
- 37 (top to bottom, 2*2 to 3*2)

7 (top to bottom, 3*3)

The second “set” of numbers (cell 3*5) consists of the following prime numbers:

3 (left to right, cell 3*5)
3 (top to bottom, cell 3*5)

The input values are represented by N lines and each line contains M values.

The values are represented as follows:

- "." – Indicates an empty space
- "*" – Indicates a value that must be replaced by the program
- 0-9 – Predefined values that may not be changed

The output should follow the same format as the input with the asterisk characters (*) replaced with actual integer values. The output should still contain the same number of N lines and M values.

For example:
Input:

```
.....
.3...
2*7.3
.....
.....
```

Output:

```
.....
.3...
277.3
.....
.....
```

If multiple solutions are available, you only need to output one of them to receive a score.