Problem 1

Write a function called `update` that takes `grid`, a 2-D list, as input and updates the grid according to the rules of Conway's Game of Life. The 2-D list uses '-' to represent cells that are 'dead' and '*' to represent cells that are 'alive'.

```
1. Any live cell with fewer than two live neighbours dies, as if by underpopulation.
2. Any live cell with two or three live neighbours lives on to the next generation.
3. Any live cell with more than three live neighbours dies, as if by overpopulation.
4. Any dead cell with exactly three live neighbours becomes a live cell, as if by
reproduction.
```

HINT: Use the `num_neighbors` function from the previous assignment to help you with this - modular programming!

```
def populate(grid, rfactor):
    rows = len(grid)
    cols = len(grid[0])
    for r in range(rows):
        for c in range(cols):
            if random.random() < rfactor:
                grid[r][c] = '*'
            else:
                grid[r][c] = '-'

random.seed(0)
g = make_grid(10,10)
populate(g,0.5)

update(g)
assert to_string(g) == '--***-*---\n-**----*--\n---**-----\n*-*----*--\n*---*-*---\n**-*-
-*-*-\n*--*-*----\n-----*----\n-***-**---\n----------\n'

update(g)
assert to_string(g) == '-***------\n-*---*----\n---*------\n-*--**----\n*-**-**---\n****-
-**--\n***--**---\n-*-*-*----\n--*-***---\n--*-------\n'

update(g)
assert to_string(g) == '-**-------\n-*-**-----\n--*--*----\n-*---**---\n*------*--\n-----
--*--\n-----*-*--\n*--*------\n-**-***---\n---*-*----\n'
```