MTH 337, Sample Quiz 12
Spring, 2021

You will have **15 minutes** to take the actual quiz in Gradescope. The quiz will start at the start of class, 9:10 AM, and will close at 9:30 AM.

1. Write a function to encrypt using the following cipher. A message is encrypted by converting the characters into numbers which are then "inverted" before turning back into characters. By inverted, I mean if the length of the alphabet is 57, then

$$0 \leftrightarrow 56$$
$$1 \leftrightarrow 55$$
$$2 \leftrightarrow 54$$
$$\vdots$$
$$27 \leftrightarrow 29$$
$$28 \leftrightarrow 28.$$

2. Given the sudoku below, what are the potential values for the (3,4) entry?

```
 ·  2  5 ‖ ·  ·  7 ‖ ·  ·  4
 ·  ·  1 ‖ ·  ·  5 ‖ ·  2  ·
 7  ·  · ‖ ·  2  · ‖ 5  ·  ·
─────────────────────────────
 5  ·  9 ‖ ·  ·  4 ‖ 8  ·  ·
 ·  ·  · ‖ ·  ·  · ‖ ·  ·  ·
 ·  ·  7 ‖ 5  ·  · ‖ 6  ·  9
─────────────────────────────
 ·  ·  3 ‖ ·  7  · ‖ ·  ·  6
 ·  4  · ‖ 1  ·  · ‖ 7  ·  ·
 8  ·  · ‖ 2  ·  · ‖ 9  1  ·
```

3. Write a function that will take a 9×9 sudoku array and a coordinate tuple as input and will return a list of the nonzero numbers in the square containing the tuple.