COMP130 Midterm Exam 2, practice exam

Time allowed: *50 minutes*
Total points: *50 points (approximately 1 point per minute)*
Write solutions on blank paper, not on this exam.
No devices are permitted. No materials may be consulted, except for one page (one side of US letter paper) of your own handwritten notes. Solutions must employ methods we have studied in class; other approaches will receive little credit.

Question 1. Functions with return values (9 points)

For this question, assume the following data about the populations of countries (in millions): Thailand: 71.6; Poland: 38.1; Peru: 34.6. Rearrange *and indent* the following lines of code to define a function that returns the correct population for the three countries given, and otherwise returns `None`.

```
return None
if country.endswith('land'):
return 71.6
if country != 'Thailand' and country != 'Poland' and country != 'Peru':
if country[1] == 'h':
def population(country):
return 34.6
return 38.1
```

Question 2. Test function with statement coverage (5 points)

The following function is a test for the function in the previous question. However, the test does not achieve statement coverage. Add code to the test function so that it achieves statement coverage.

```
def test_population():
    assert population('Thailand') == 71.6
```

Question 3. Loops and string access (10 points)

What is the output of the following Python code?

```
s = 'abc'
while len(s) < 8:
    print(s)
    i = 0
    while i < len(s):
        print(s[i])
        print(s[-(i+1)])
        i = i + 2
    s = s + 'xyz'
```

Question 4. Nested list access and slicing (12 points)

What is the output of the following Python code?

```
values = [-5, [3, 5, 7], 'COMP130', [8]]
print(values[0])
print(values[2])
print(values[:2])
print(values[2][3:6])
print(values[3])
values.extend(['abc', 'xyz'])
print(values[4])
```

Question 5. Social, legal, and ethical issues in computing (10 points)

This question refers to our reading on Computing & The Greater Good. The reading described five false dichotomies in computing and society. Choose *two* of these dichotomies. For each of your chosen dichotomies, write *two* sentences describing and explaining that dichotomy. So your answer should contain *four sentences* in total.

Question 6. Lists (4 points)

The output of the following code should be

```
[[0], [1, 0], [2, 1, 0], [3, 2, 1, 0]]
```

Fill in the blanks to provide a correct version of the code.

```
1 list_of_countdowns = []
2 for i in range(4):
3     countdown = ____________
4     for j in ________________________:
5         countdown.________________
6     list_of_countdowns.________________
7 print(list_of_countdowns)
```

Total number of points: **50**