

Name _____

Section _____

Roll # _____

6 points.

1. (2 points) Nuclear missiles can only be launched if both the president and the PM are OK with it. If one of them is OK with it and the other is not OK with it, then they should deliberate upon it. However, if they both are not OK, they should not launch. What are the cases that the following code gives correct output? Can you write the correct code?

```
if president_ok:
    if pm_ok:
        print("Launch.")
    else:
        print("DoNotLaunch.")
else:
    print("Deliberate.")
```

2. (1 point) What is printed? Explain why?

```
print(False and True == False and True)
```

3. (1 point) In the class we studied that we can study the rock paper scissors game using modular arithmetic using the encoding rock (0), paper (1), scissors (2). Can we use a new encoding rock (2), paper (0), scissors (1) and still figure out when computer wins? If possible, write the condition when computer wins,

else explain why this encoding will not suffice in figuring when computer wins.

4. (2 points) What gets printed if i is 5? Write the mathematical expression for k in terms of i (for any value of i). As an example, we can have $k = 4*i + 7$. This is not the correct expression but tells us how an expression of k in terms of i would look like.

```
k = 0
while i > 0:
    j = 1
    while j <= i:
        k = k + j
        j = j + 1
    i = i - 1
print(k)
```