

BRAC University (Department of Computer Science and Engineering)
CSE 470 (Software Engineering) | Fall 2024

Quiz 3 (Set A)

Full Marks: 10

Duration: 20 minutes

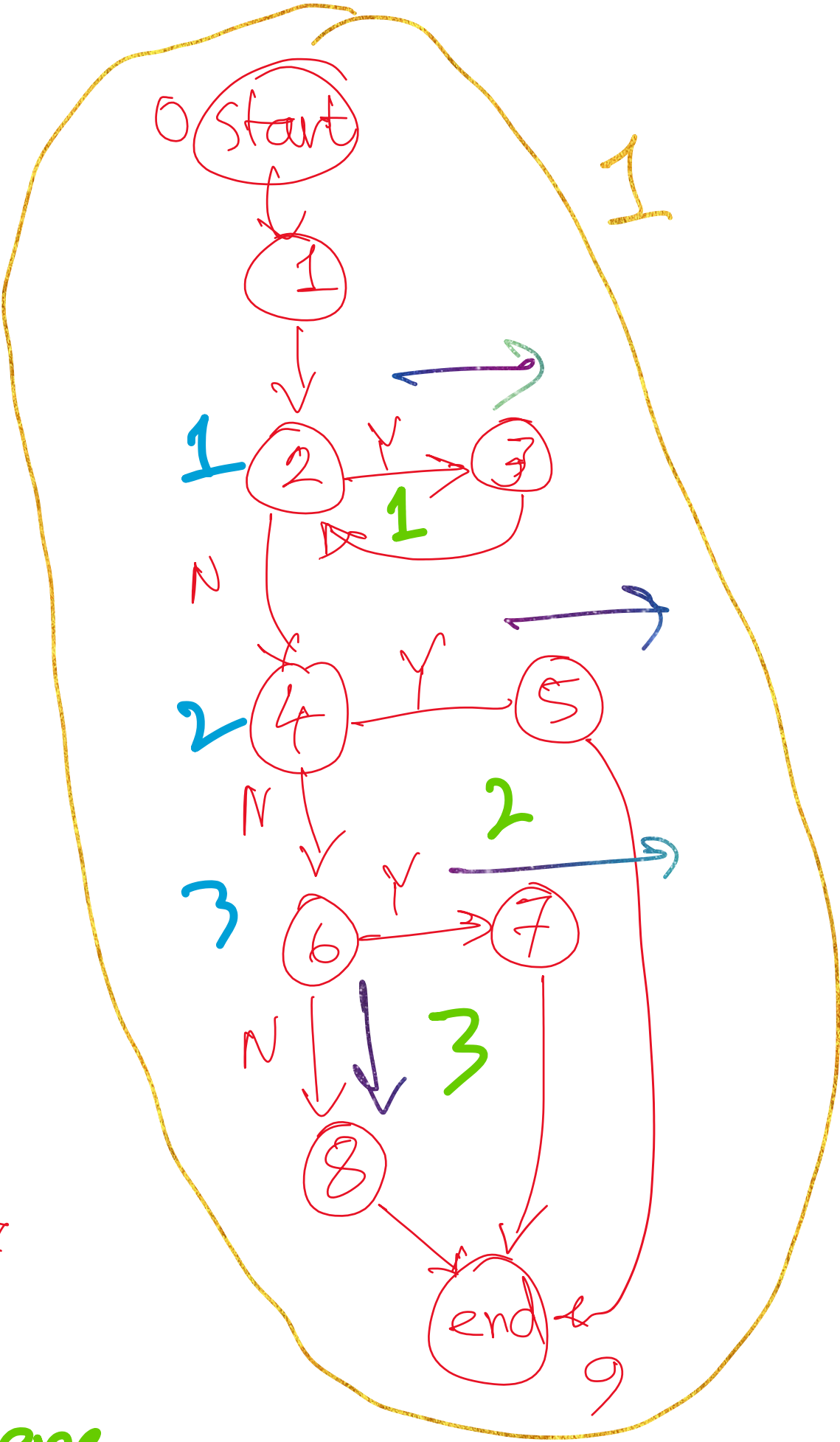
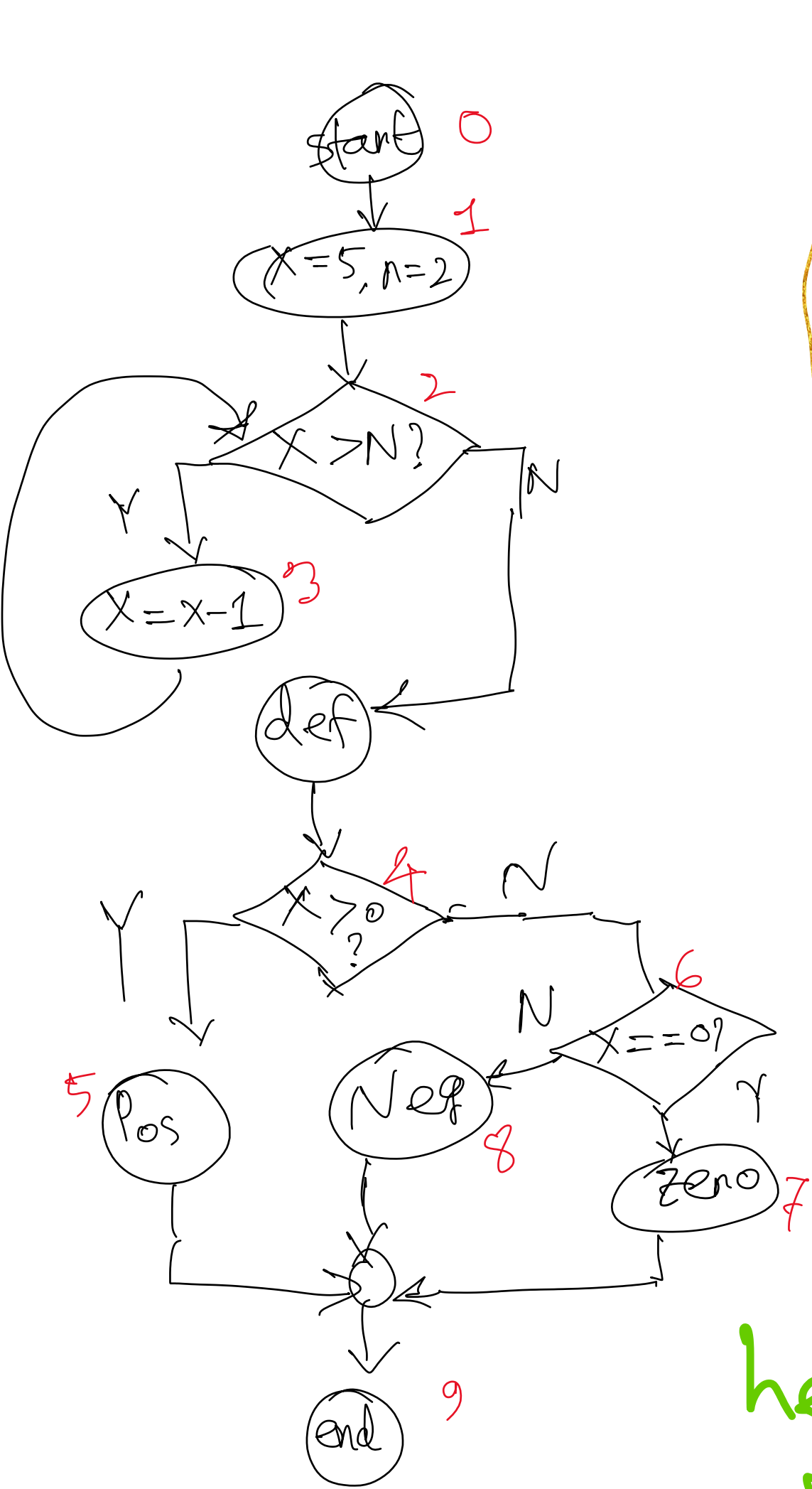
Name:

Student ID:

Section:

1. Draw CFG diagram for the given code segment. **[5 marks]**
2. Calculate Cyclomatic Complexity. **[1 marks]**
3. State the Basic Path Sets. **[1 marks]**
4. Generate test cases for each of the paths. (just mention the x and n values) **[3 marks]**

```
def checkSign(k) :  
    if k > 0:  
        print("Positive")  
    elif k == 0:  
        print("Zero")  
    else:  
        print("Negative")  
    return  
    k = -k  
    print("Negative Complement")  
  
x=5  
n=2  
while x>n:  
    x = x-1  
    checkSign(x)  
print("THE END")
```



here,
region, $R = 3$

$C = R + 1 = 4$

$E = 12$
 $N = 10$
 $P = 1$

$C = E - N + 2P$
 $= 12 - 10 + 2$
 $= 4$

predicate node,
 $P = 3$
 $C = P + 1 = 4$

Test cases

basic paths:

- $1 \rightarrow 2 \rightarrow 3 \rightarrow 2 \rightarrow 4 \rightarrow 5 \rightarrow 9$
- $1 \rightarrow 2 \rightarrow 4 \rightarrow 6 \rightarrow 7 \rightarrow 9$
- $1 \rightarrow 2 \rightarrow 4 \rightarrow 6 \rightarrow 8 \rightarrow 9$

$3 < 4$ (C)

but all 4 cases covered

- $X = 3, n = 1$
- $X = 0, n = 1$
- $X = -2, n = 1$

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Quiz 3 (Set B)

Full Marks: 10

Duration: 20 minutes

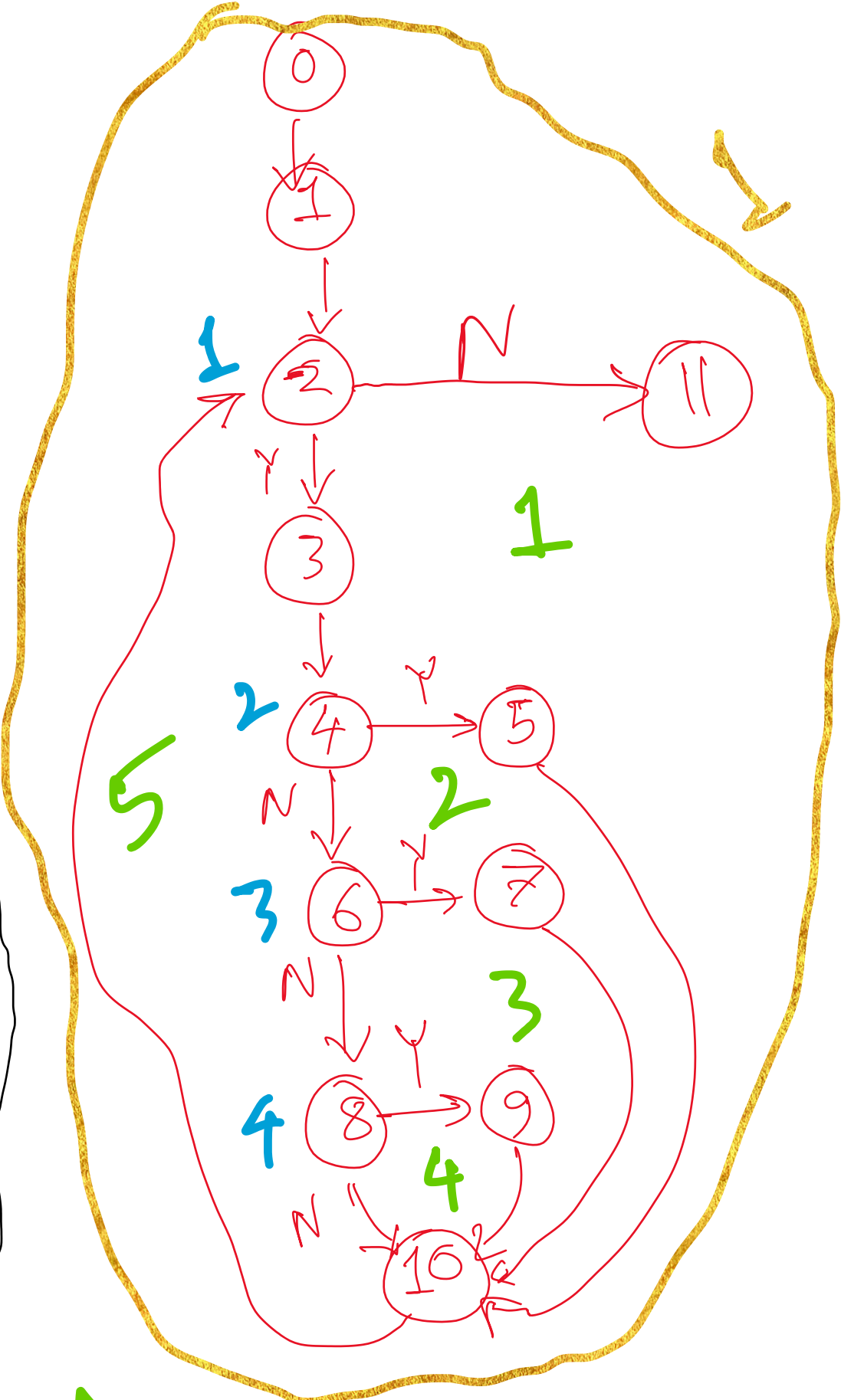
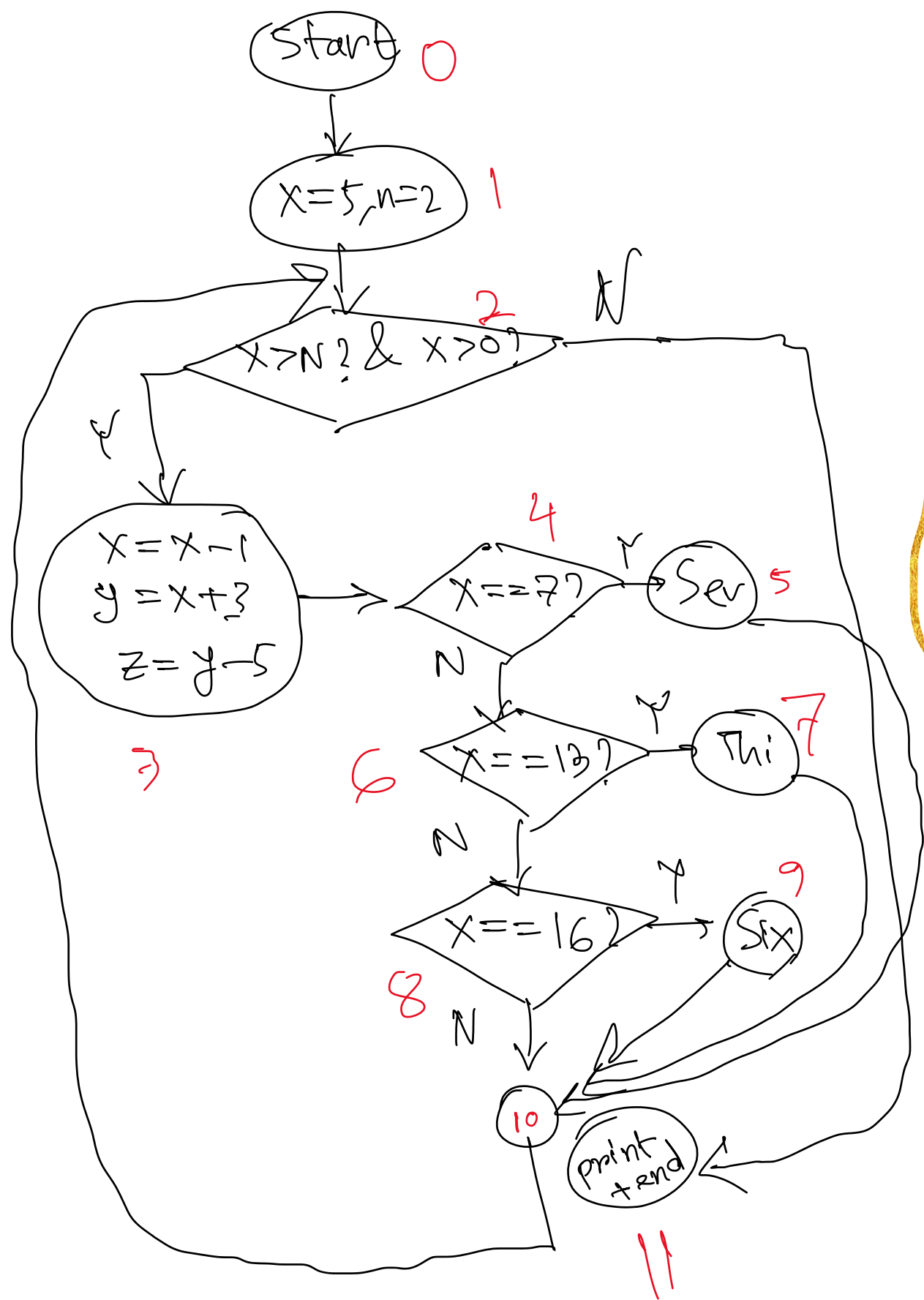
Name:

Student ID:

Section:

1. Draw CFG diagram for the given code segment. **[5 marks]**
2. Calculate Cyclomatic Complexity. **[1 marks]**
3. State the Basic Path Sets. **[1 marks]**
4. Generate test cases for each of the paths. (just mention the x and n values) **[3 marks]**

```
x=5
n=2
while x>n and x>0:
    x = x-1
    y = x+3
    z = y-5
    if x == 7:
        print("Lucky Seven")
    elif x == 13:
        print("Unlucky Thirteen")
    elif x == 16:
        print("Sweet Sixteen")
print("THE END")
```



predicate node,

$P = 4$

$C = P + 1 = 5$

Here, region, $R = 4$
 $C = R + 1 = 5$

$E = 14$
 $N = 11$
 $P = 1$

$C = E - N + 2P = 5$

basic paths:

$1 \rightarrow 2 \rightarrow 11$

$1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 10 \rightarrow 11$

$1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 6 \rightarrow 7 \rightarrow 10 \rightarrow 11$

$1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 6 \rightarrow 8 \rightarrow 9 \rightarrow 10 \rightarrow 11$

$1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 6 \rightarrow 8 \rightarrow 10 \rightarrow 11$

test cases:

$X = 3, n = -1$

$X = 8, n = 3$

$X = 14, n = 2$

$X = 17, n = 3$

$X = 20, n = 1$

$5 \leq C$