SYSC 4101: Lab 8
Juanita Rodelo
101141857

Exercise 1

1. A or (B and not (C))

	ABC	**Result**	**Corr. False Case**
1	TTT	T	A(5)
2	TTF	T	
3	TFT	T	A(7)
4	TFF	T	A(8)
5	FTT	F	A(1), C(6)
6	FTF	T	B(8), C(5)
7	FFT	F	A(3)
8	FFF	F	A(4), B(6)

Taking a Pair from each:
A: (1, 5) or (3, 7) or (4, 8)
B: (6, 8)
C: (5, 6)

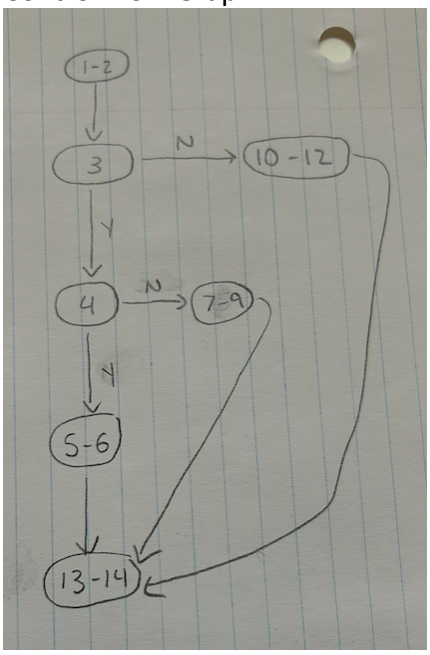
Test Case:
(1, 5, 6, 8)

2. Unique true points for P:
   UTP for A: (T, ?, ?) -> (T, T, T) or (T, F, T) or (T, F, F)
   UTP for B and not (C): (?, T, F) -> (F, T, F)

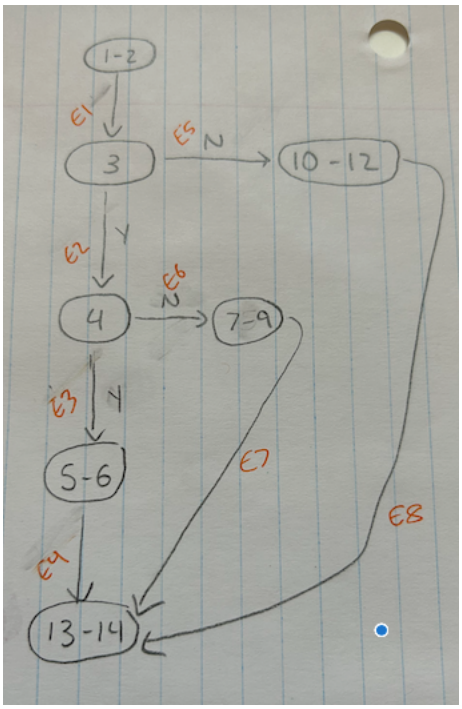
   Near False Points for P:
   NFP for A: (F, ?, ?) -> (F, F, T) or (F, T, T) or (F, F, F)
   NFP for B in (B and not (C)): (?, F, ?) -> (F, F, F)
   NFP for C in (B and not (C)): (?, ? , F) -> (F, T, F)

Exercise 2

1. Control Flow Graph:



2. Yes these three test suites are all-edges adequate.
   TC1 follows edges: E1, E2, E3, E4
   TC2 follows edges: E1, E2, E6, E7
   TC3 follows edges: E1, E5, E8



3. First predicate: (a > 12 and b < 45):

	(a>12), (b<45)	**Result**	**Corr. False Case**
1	TT	T	a>12(3), b<45(2)
2	TF	F	b<45(1)
3	FT	F	a>12(1)
4	FF	F	

Taking a pair from each:
(a>12): (1, 3)
(b<45): (1, 2)

Test Cases: (1, 2, 3) = a>12 and b<45, a>12 and b >=45, a<=12 and b<45

Second predicate: (c > 4 or b > 0):

	(c>4), (b>0)	**Result**	**Corr. False Case**
1	TT	T	
2	TF	T	c>4(4)
3	FT	T	b>0(4)
4	FF	F	c>4(2), b>0(3)

Taking a pair from each:
(c>4): (2, 4)
(b>0): (3, 4)

Test Cases: (2, 3, 4)

4.

5. Unique true points for (a > 12 and b < 45):
   UTP for a>12 : (T, ?) -> (T, F) – a could be 15 and b could be 50
   UTP for b<45: (?, T) -> (F, T) – a could be 5 and b could be 20

   Near False Points:
   NFP for a>12 in (a > 12 and b < 45): -> (F, T) – a could be 13 and b could be 40
   NFP for b<45 in (a > 12 and b < 45): -> (T, F) – a coule be 15 and b could be 50

Exercise 3

a) RACC:

	ABC	**Result**	**Corr. False Case**
1	TTT	T	A(5), B(3)
2	TTF	T	
3	TFT	F	A(7), B(1), C(4)
4	TFF	T	C(3)
5	FTT	F	A(1), B(7), C(6)
6	FTF	T	C(5)
7	FFT	T	A(3), B(5)
8	FFF	T	

b) Taking a pair from each:
A: (1, 5) or (1, 3)
B: (1, 3) or (5, 7)
C: (3, 4) or (4, 6)

One possible test case:
(1, 3, 4)

b) Unique true Points:
UTP for ab: (T, T, ?) -> (T, T, T)
UTP for b and not(c): (?, T, F) -> (F, T, F)
UTP for not(c): (?, ?, F) -> (F, F, F) or (T, F, F)

Near False Points:
NFP for a in ab: (F, ?, ?) -> (F, F, F) or (F, T, T)
NFP for b in ab: (?, F, ?) -> (T, F, T)
NFP for b in bc: (?, F, ?) -> (T, F, T)
NFP for c in bc: (?, ?, F) -> ()
NFP for c in c:

Exercise 4

a) RACC:

	ABC	**Result**	**Corr. False Case**
1	TTT	F	B(3), C(2)
2	TTF	T	C(1)
3	TFT	T	A(7), B(1)
4	TFF	T	
5	FTT	F	C(6)
6	FTF	T	C(5)
7	FFT	F	A(3), C(8)
8	FFF	T	C(7)

Taking a pair from each clause:
A: (3, 7)
B: (1, 3)
C: (1, 2) or (5, 6) or (7, 8)

One possible test case:
(1, 2, 3, 7)

c) Unique true Points:
UTP for a and not(b): (T, F, ?) -> (T, F, T)
UTP for not(c): (?, ?, F) -> (F, F, F) or (F, T, F) or (T, T, F)

Near False Points:
NFP for a in a and not(b): (F, ?, ?) -> (F, F, F) or (F, T, T)
NFP for b in a and not(b): (?, F, ?) -> (T, F, F)
NFP for c in not(c): (?, ?, T) -> (T,F,T) or (F,F,T)