

SYSC 4101A
Lab 8
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Exercise 1

Question 1

$P = A \text{ or } (B \text{ and not}(C))$

Major clause A: A determines P.

- **A=true**, B=false, C=false, P=true
- **A=false**, B=false, C=false, P=false

Major clause B: C must be false to determine P.

- A=true, **B=true**, C=false, P=true
- A=true, **B=false**, C=false, P=false

Major clause C: B must be true to determine P.

- A=true, B=true, **C=true**, P=false
- A=true, B=true, **C=false**, P=true

Test suite:

(true, false, false), (false, false, false), (true, true, false), (true, true, true)

Question 2

$P = A \text{ or } (B \text{ and not}(C))$

- UTP for A: (1, ?, ?) -> (1, 0, 0), (1, 1, 0), (1, 0, 1), (1, 1, 1)
- NFP for A: (0, ?, ?) -> (0, 0, 0), (0, 1, 0), (0, 0, 1), (0, 1, 1)
- UTP for Bnot(C): (?, 1, 1) -> (0, 1, 1), (1, 1, 1)
- NFP for B in Bnot(C): (?, 0, 1) -> (0, 0, 1), (1, 0, 1)
- NFP for C in Bnot(C): (? 1, 0) -> (0, 1, 0), (1, 1, 0)

Test suite:

(1, 0, 0), (1, 1, 0), (1, 0, 1), (1, 1, 1), (0, 0, 0), (0, 1, 0), (0, 0, 1), (0, 1, 1)