SMIT SIKKIM MANIPAL UNIVERSITY
SIKKIM MANIPAL INSTITUTE OF TECHNOLOGY

Engineering Mathematics III

Discrete Mathematics

Lecture 32

Theory of Inference: Statement Calculus

```
i = 1.
While True:
    print i
    i = i+1
    if (i<n): break
```

p: $x < 0$.

```
if (x < 0):
    y = -x + 1    - q
else:
    y = x + 1
```

$p \rightarrow q$

$y = b$

→ input : $x = -5$

→ output : $y = 0$

p : I am a student.

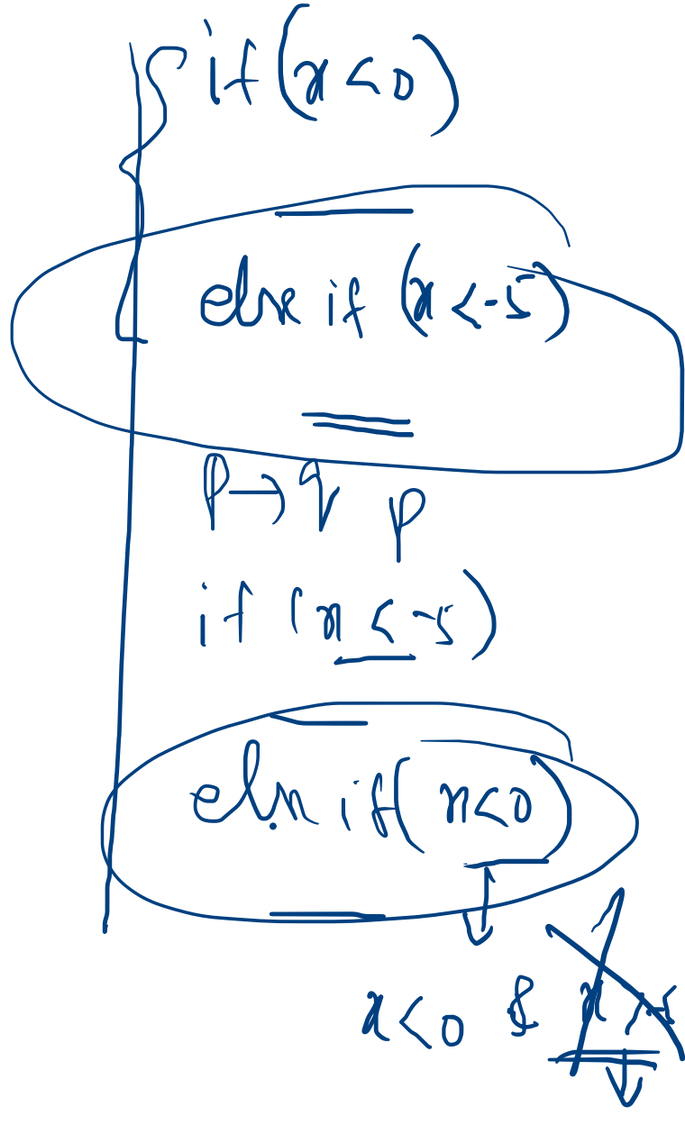
q : I use mobile phone

p, $p \to q$, Conclusion: I am David.

Determine whether the conclusion C follows logically from the premises H_1 and H_2.

$H_1: P \to Q$ $H_2: P$ $C: Q$

P	Q	$P \to Q$
T	T ✓	T
T	F	F
F	T	T
F	F	T



H_1: If Canada is a Country then Newyork is city

H_2: New yark is a city

C: Canada is a Country

```
if (x == Country):
    y = city

y = city

x is a Country.
```

$H_1 : P \to Q$ $H_2 : \neg(P \wedge Q)$ $C : \neg P$