Section 1.11 : The Conditional

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9:52 AM

conditional :

$$p \rightarrow q$$

"p implies q"

or "if p, then q"

example : If I live in Saanich, then I live in BC.

handout

	school?	≤ 30 km/h?	lawful
A	no	no	yes
B	no	yes	yes
C	yes	no	no
D	yes	yes	yes

p	q	p → q
0	0	1
0	1	1
1	0	0
1	1	1

True

example : If Barney is a dog, then he has four legs.

Answer the following questions:

Barney is a dog. Does he have four legs? Yes
Barney is not a dog. Does he have four legs? Maybe
Barney has four legs. Is he a dog? Maybe
Barney does not have four legs. Is he a dog? No

$p \to q$

example: True: If Snarks are Boojums, then the Bellman is incorrect.

Which of the following cannot occur?

a) Snarks are Boojums and the Bellman is incorrect. (p is true)

b) Snarks are not Boojums and the Bellman is incorrect.

c) Snarks are not Boojums and the Bellman is correct.

d) Snarks are Boojums and the Bellman is correct. (p is true)

if p is false, then q can be anything