

APPENDIX L2

(50) TRUTH TABLE FOR  $(p \wedge \neg q) \wedge p$

p	q	$p \wedge \neg q$	$(p \wedge \neg q) \wedge p$
T	T	F	F
T	F	T	T
F	T	F	F
F	F	F	F

(62) I am not going OR she is going

p q

$(p \vee q)$  given

By De Morgan's law,

$$\sim(p \vee q) \equiv \sim p \wedge \sim q$$

Therefore, the negation of the given statement is

"I am going AND she is not going"

$\sim p \wedge \sim q$

(64)  $\frac{1}{2} > 0$  and  $-12 < 0$

p q

$p \wedge q$

The negation of  $p \wedge q$

$$\sim(p \wedge q) \equiv \sim p \vee \sim q$$

Therefore, the negation of the given statement is

$\frac{1}{2} \leq 0$  OR  $-12 \geq 0$

$\sim p \vee \sim q$

APPENDIX L3

(2) if you see it on the internet, then you can believe it.

(6) if you are a marine, then you love bootcamp.

APPENDIX L4

(6) Milk contains Calcium.

Given: if it is milk, then it has Ca.  
 $p \rightarrow q$

Converse:  $q \rightarrow p$   
if it has Ca, then it is milk.

Inverse:  $\sim p \rightarrow \sim q$   
if it is not milk, then it doesn't contain Ca

Contrapositive:  $\sim q \rightarrow \sim p$   
if it doesn't have Ca, then it is not milk