

P	Q	R	$P \vee Q$	$P \vee Q \rightarrow R$	$\neg(P \vee Q \rightarrow R)$	$\neg(P \vee Q)$	$\neg R$
T	T	T	T	T	F	F	F
T	T	F	T	F F	F	F	T
T	F	T	T	T	F	T	F
T	F	F	T	F F	F	T	T
F	T	T	T	T	F	T	F
F	T	F	T	F	T	F	T
F	F	T	F	F T	T	T	T
F	F	F	F	T	T	T	T

$$Q = 1 \quad (a)$$

$$(a) \quad \bar{P} \wedge Q \wedge Y$$

$$(b) \quad P \wedge \rightarrow Q$$

$$(c) \quad P \wedge (\sim Q \vee \sim Y)$$

$$(d) \quad \sim P \wedge (Q \wedge \sim Y)$$

$$(e) \quad \sim P \vee (Q \wedge Y)$$

~y

p	q	r	$\sim r$	$\sim q$	$p \wedge q$	$p \wedge \sim r$	$p \vee \sim q$	$\sim q \rightarrow p$
T	T	T	F	F	T	F	T	T
T	T	F	T	F	T	T	T	T
T	F	T	F	T	F	T	T	T
T	F	F	T	T	F	F	T	T
F	T	T	F	F	F	F	T	F
F	T	F	T	F	F	F	T	F
F	F	T	F	T	F	F	T	T
F	F	F	T	T	F	F	T	T

OR

Part (11) $P \rightarrow Q$

$Q=2$

(a) $\sim Q \vee \dots \vee$

P	Q	Y	$\sim Q$	$P \rightarrow Q$	$\sim Q \vee Y$
T	T	T	F	T	T
T	T	F	F	T	F
T	F	T	T	F	T
T	F	F	T	F	T
F	T	T	F	T	T
F	T	F	F	T	F
F	F	T	T	T	T
F	F	F	T	T	T

(a) $P \wedge Q \rightarrow \sim Y$

$P \vee \sim Q \quad Q=2$

$\sim Q \rightarrow P \quad (b)$

Q=3 Answer

P: This house is next to a lake.

Q: The treasure is in the kitchen.

R: The tree in the front yard is an elm.

S: The treasure is buried under the flagpole.

T: The tree in the ~~back~~ back yard is an oak.

U: The treasure is in the garage.

We can translate the five sentences

(a) $P \rightarrow \sim Q$

(b) $\neg R \rightarrow Q$

(c) P

(d) $\neg \vee S$

(e) $t \rightarrow u$

Part (1)

Condition 2 (B)

If today is Easter, then tomorrow is

Monday

Converse

If tomorrow is Monday, then today is Easter.

inverse

If today is not Easter, then tomorrow is not Monday.

Contraposite

If tomorrow is not Monday, then today is not Easter.

$Q = 2$ (a) Part (1)

(a) If Howard can swim across the lake, then Howard can swim to the island.

$P \rightarrow Q$

The Converse

If Howard can swim to the island, then Howard can swim across the lake.

$Q \rightarrow P$

The Inverse

If Howard cannot swim across the lake, then Howard cannot swim to the island.

The Contrapositive

If Howard cannot swim to the island, then Howard cannot swim across the lake.

NAME \Rightarrow M-Wajid

ID \Rightarrow 16055

INSTRUCTOR \Rightarrow Saifulah Jan

ASSIGNMENT ^{DATA} \Rightarrow 18

SUBJECT \Rightarrow

DISCRETE STRUCTURE