

1.

R	Q	Premise $R \rightarrow Q$	Premise R	Conclusion Q
T	T	T	T	T
T	F	F	T	F
F	T	T	F	T
F	F	T	F	F

Cross out the rows where an F occurs in a premise column.
In the remaining rows, the column conclusion must all be T's if the argument is valid.

It is VALID

2.

R	Q	Premise $R \rightarrow Q$	Premise $\sim Q$	Conclusion $\sim R$
T	T	T	F	F
T	F	F	T	F
F	T	T	F	T
F	F	T	T	T

It is VALID

3.

P	S	Premise $P \rightarrow S$	Premise $S \rightarrow P$	Conclusion $(P \rightarrow S) \vee (S \rightarrow P)$
T	T	T	T	T
T	F	F	T	T
F	T	T	F	T
F	F	T	T	T

It is VALID

4 C - Cake gets hot

M - icing melts

P - cake can be used at the party.

$C \rightarrow M$

$M \rightarrow \sim P$

$(C \rightarrow M) \wedge (M \rightarrow \sim P)$

C	M	P	Premise $C \rightarrow M$	Premise $\sim P$	Premise $M \rightarrow \sim P$	Conclusion $(C \rightarrow M) \wedge (M \rightarrow \sim P)$
T	T	T	T	F	F	F
T	T	F	T	T	T	T
T	F	T	F	F	T	F
T	F	F	F	T	T	F
F	T	T	T	F	F	F
F	T	F	T	T	T	T
F	F	T	T	F	T	T
F	F	F	T	T	T	T

It is VALID

5. C - will earn an A in class

S - studies

L - lots of sleep

$$C \leftrightarrow (S \wedge L)$$

$$\sim S \rightarrow \sim C$$

C	S	L	$S \wedge L$	$C \leftrightarrow (S \wedge L)$	$\sim S$	$\sim C$
T	T	T	T	T	F	F
T	T	F	F	F	F	F
T	F	T	F	F	T	F
T	F	F	F	F	T	F
F	T	T	T	F	F	T
F	T	F	F	F	F	T
F	F	T	F	T	T	T
F	F	F	F	T	T	T

It is INVALID