

Spot any errors (compared with an error-free table).

1.

P	Q	R	$R \vee R$	$P \supset Q$	$\neg R$	$(R \vee R) \vee \neg R$	$[(R \vee R) \vee \neg R] \wedge R$	$\{[(R \vee R) \vee \neg R] \wedge R\} \vee (P \supset Q)$
T	T	T	T	T	F	T	T	T
F	T	T	T	T	F	T	T	T
T	F	T	T	F	F	T	T	T
F	F	T	T	T	F	T	T	T
T	T	T	F	T	T	T	F	T
F	T	F	F	T	T	T	F	T
T	F	F	F	F	T	T	F	F
F	F	F	F	T	T	T	F	T

2.

P	R	$P \wedge R$	$\neg P$	$\neg R$	$\neg R \supset \neg P$	$\neg(P \wedge R)$	$(\neg R \supset \neg P) \supset \neg(P \wedge R)$
T	T	T	F	F	T	F	F
F	T	F	T	T	T	T	T
T	F	F	F	T	F	T	T
F	F	F	T	T	T	T	F

3.

P	Q	R	$P \vee Q$	$P \wedge R$	$\neg R$	$\neg R \supset (P \wedge R)$	$\neg(P \vee Q)$	$\neg(P \vee Q) \wedge [\neg R \supset (P \wedge R)]$
T	F	T	T	T	F	T	F	F
F	T	T	T	F	F	T	F	F
T	T	T	T	T	F	T	F	F
F	F	F	F	F	F	T	T	T
T	T	F	T	F	T	F	F	F
F	T	F	T	F	T	F	F	F
T	F	F	T	F	T	F	F	F
F	F	F	F	F	F	F	F	F

4.

P	Q	$P \supset Q$	$\neg P$	$\neg Q$	$\neg P \wedge Q$	$(\neg P \wedge Q) \vee (P \supset Q)$	$[(\neg P \wedge Q) \vee (P \supset Q)] \wedge \neg Q$
T	T	T	F	F	T	T	F
T	T	T	T	F	T	F	F
F	F	T	F	T	F	F	F
T	F	F	T	T	F	T	T

5.

P	Q	$\neg P$	$\neg Q$	$\neg P \supset \neg Q$
T	T	F	F	T
F	T	F	F	T
T	T	F	T	T
T	F	T	T	T

6.

P	Q	R	$P \vee Q$	$R \wedge R$	$\neg Q$	$\neg Q \wedge (R \wedge R)$	$\neg(P \vee Q)$	$[\neg Q \wedge (R \wedge R)] \wedge \neg(P \vee Q)$
T	T	T	F	T	F	F	F	F
F	T	T	F	T	F	F	F	F
T	F	T	T	T	T	T	F	F
F	F	T	F	T	T	T	T	T
T	T	F	T	F	F	F	F	F
T	T	F	T	T	F	F	F	F
T	F	T	T	F	T	F	F	F
F	F	F	F	F	T	F	T	F

7.

Q	R	$Q \vee Q$	$Q \vee R$	$R \wedge Q$	$(Q \vee R) \supset (Q \vee Q)$	$\neg[(Q \vee R) \supset (Q \vee Q)]$	$\neg[(Q \vee R) \supset (Q \vee Q)] \supset (R \wedge Q)$
T	F	T	T	T	T	F	T
F	F	F	F	F	F	T	F
F	F	T	F	F	T	F	T
F	T	F	F	F	T	T	T

8.

P	Q	R	$P \vee P$	$Q \wedge R$	$\neg R$	$\neg R \vee (Q \wedge R)$	$[\neg R \vee (Q \wedge R)] \wedge (P \vee P)$	$\neg\{[\neg R \vee (Q \wedge R)] \wedge (P \vee P)\}$
T	T	T	T	T	F	T	T	F
F	T	T	F	T	F	T	F	T
T	F	T	T	F	F	F	F	T
F	F	T	F	F	F	F	F	T
T	T	F	T	T	T	T	T	F
F	T	F	F	F	T	T	F	T
T	F	F	T	F	T	T	T	F
F	F	F	F	F	T	T	F	T

9.

P	Q	R	$Q \vee P$	$R \wedge Q$	$(R \wedge Q) \wedge R$	$P \wedge (Q \vee P)$	$\neg[(R \wedge Q) \wedge R]$	$[P \wedge (Q \vee P)] \supset \neg[(R \wedge Q) \wedge R]$
T	T	T	T	F	F	T	F	F
F	T	T	T	T	F	T	F	T
T	T	T	T	F	F	T	F	T
F	F	T	F	F	T	F	T	T
T	T	F	T	F	F	T	T	T
F	T	F	T	F	F	F	T	F
T	F	F	T	F	F	F	T	T
F	F	F	F	F	F	F	T	T

10.

P	Q	R	$R \vee P$	$\neg Q$	$\neg Q \supset P$	$(\neg Q \supset P) \wedge (R \vee P)$	$\neg[(\neg Q \supset P) \wedge (R \vee P)]$	$\neg\neg[(\neg Q \supset P) \wedge (R \vee P)]$
T	T	T	T	F	T	T	F	T
F	T	T	T	F	T	T	F	T
T	F	F	T	T	T	T	F	T
F	F	T	F	T	F	F	T	F
T	T	T	T	F	T	T	F	T
F	T	F	F	F	T	F	T	F
T	F	F	T	T	T	T	F	F
F	F	F	F	T	F	F	T	F

11.

P	Q	R	$P \vee P$	$Q \vee R$	$(P \vee P) \wedge R$	$\neg(Q \vee R)$	$Q \vee \neg(Q \vee R)$	$[Q \vee \neg(Q \vee R)] \wedge [(P \vee P) \wedge R]$
T	T	T	T	T	T	F	T	T
F	T	T	F	T	F	F	T	F
T	F	F	T	F	F	T	F	F
F	F	T	F	T	F	F	F	F
T	T	F	T	T	F	F	T	F
F	T	F	F	T	F	F	T	F
T	F	F	T	F	F	T	T	F
F	F	T	T	F	F	T	T	F

12.

P	Q	R	$Q \vee R$	$R \supset P$	$\neg R$	$\neg R \supset (R \supset P)$	$[\neg R \supset (R \supset P)] \vee Q$	$\{[\neg R \supset (R \supset P)] \vee Q\} \vee (Q \vee R)$
T	T	T	T	T	F	T	T	T
F	T	T	T	F	F	T	T	T
T	F	T	T	T	T	T	T	T
F	F	T	T	F	F	T	T	T
T	T	F	T	T	F	T	T	T
F	T	F	T	T	T	T	T	T
T	F	F	F	T	T	T	T	T
F	F	F	F	T	T	T	T	T

13.

P	Q	R	$P \supset R$	$R \wedge Q$	$P \vee (P \supset R)$	$\neg(R \wedge Q)$	$[P \vee (P \supset R)] \wedge R$	$\{[P \vee (P \supset R)] \wedge R\} \wedge \neg(R \wedge Q)$
T	T	T	T	T	T	F	T	F
F	T	F	T	T	T	F	F	F
T	F	T	T	F	T	T	T	T
F	F	T	T	F	T	T	T	T
T	T	F	F	F	F	T	F	F
F	T	F	T	F	F	T	F	F
T	F	F	F	F	F	T	F	F
T	F	F	T	F	T	T	T	F

14.

P	R	$R \supset P$	$P \wedge P$	$(P \wedge P) \supset P$	$P \supset (R \supset P)$	$[(P \wedge P) \supset P] \vee [P \supset (R \supset P)]$	$\neg\{[(P \wedge P) \supset P] \vee [P \supset (R \supset P)]\}$
T	T	T	T	F	T	T	T
F	T	F	F	T	T	T	F
F	F	T	T	T	T	T	F
F	F	T	T	T	T	F	F

15.

P	Q	R	$Q \vee P$	$\neg Q$	$\neg R$	$\neg Q \supset (Q \vee P)$	$[\neg Q \supset (Q \vee P)] \supset \neg R$	$\neg\{[\neg Q \supset (Q \vee P)] \supset \neg R\}$
T	T	T	T	F	F	T	F	T
F	T	T	T	F	F	T	F	T
T	F	T	T	T	F	T	F	T
F	F	T	F	T	F	F	T	T
T	T	F	T	F	T	T	T	F
F	T	F	T	F	T	T	T	F
T	F	F	T	T	T	T	T	F
F	F	F	F	T	T	F	T	F

16.

P	Q	R	$Q \wedge P$	$R \wedge R$	$\neg P$	$\neg(Q \wedge P)$	$(R \wedge R) \supset \neg(Q \wedge P)$	$[(R \wedge R) \supset \neg(Q \wedge P)] \supset \neg P$
T	T	T	T	T	F	F	F	T
F	T	T	F	T	T	T	T	T
T	F	T	F	T	F	T	T	F
F	F	T	F	T	T	T	F	T
T	T	F	T	F	F	F	T	F
F	T	F	T	T	T	T	T	T
T	F	F	F	F	F	T	T	F
F	F	F	F	F	T	T	T	T

17.

Q	R	$R \supset R$	$R \wedge Q$	$\neg(R \wedge Q)$	$\neg(R \wedge Q) \vee (R \supset R)$	$\neg[\neg(R \wedge Q) \vee (R \supset R)]$	$\neg\neg[\neg(R \wedge Q) \vee (R \supset R)]$
F	T	T	T	F	T	F	F
F	T	T	F	T	T	F	T
T	F	F	F	T	T	F	T
F	F	T	F	T	T	F	T

18.

P	R	$P \wedge R$	$\neg(P \wedge R)$
T	T	T	F
F	F	F	T
T	F	F	T
F	T	F	T

19.

Q	R	$Q \vee Q$	$R \wedge Q$	$\neg Q$	$(R \wedge Q) \supset Q$	$(Q \vee Q) \wedge \neg Q$	$[(R \wedge Q) \supset Q] \wedge [(Q \vee Q) \wedge \neg Q]$
T	T	T	T	F	T	F	F
F	F	F	F	T	F	F	F
T	F	T	F	F	F	F	F
F	T	F	F	T	T	F	F

20.

P	Q	R	$R \vee Q$	$Q \wedge P$	$\neg R$	$(Q \wedge P) \vee \neg R$	$\neg(R \vee Q)$	$\neg(R \vee Q) \wedge [(Q \wedge P) \vee \neg R]$
F	T	T	T	T	F	T	F	F
F	T	T	T	F	F	T	F	F
T	F	T	T	F	F	F	F	F
F	F	T	T	F	F	F	F	F
T	T	T	T	T	T	T	F	F
F	T	F	T	F	T	T	F	F
T	F	F	F	F	T	T	T	T
F	F	F	F	F	T	T	T	T

21.

P	Q	R	$R \vee P$	$P \supset Q$	$(R \vee P) \wedge R$	$[(R \vee P) \wedge R] \wedge (P \supset Q)$	$\neg\{[(R \vee P) \wedge R] \wedge (P \supset Q)\}$	$\neg\neg\{[(R \vee P) \wedge R] \wedge (P \supset Q)\}$
T	T	T	T	T	T	T	F	T
F	T	T	T	T	T	T	F	T
T	F	T	T	F	F	F	T	F
F	F	T	T	T	T	F	T	T
T	T	F	T	T	F	F	T	T
F	T	F	T	T	F	F	T	T
T	F	T	T	F	F	F	T	F
F	F	F	F	T	T	T	F	F

22.

P	Q	R	$Q \wedge Q$	$\neg P$	$\neg R$	$(Q \wedge Q) \wedge \neg P$	$Q \wedge \neg R$	$(Q \wedge \neg R) \vee [(Q \wedge Q) \wedge \neg P]$
T	T	T	T	F	F	F	F	F
F	T	T	T	T	F	T	T	T
T	T	T	F	F	F	F	F	F
T	F	T	F	T	F	F	F	T
T	T	F	T	F	T	F	T	T
F	T	F	T	T	T	T	T	F
T	F	F	F	T	T	T	F	F
F	F	F	F	T	T	F	F	F

23.

P	Q	R	$Q \supset P$	$R \wedge R$	$\neg R$	$(Q \supset P) \supset \neg R$	$(R \wedge R) \vee [(Q \supset P) \supset \neg R]$	$\neg\{(R \wedge R) \vee [(Q \supset P) \supset \neg R]\}$
T	T	T	T	T	F	F	T	F
F	T	T	F	T	F	T	F	F
T	F	T	T	T	F	F	T	F
F	F	T	T	T	F	F	F	T
T	T	F	T	F	T	T	T	F
F	F	F	F	F	T	T	T	F
T	F	F	T	F	T	T	T	F
F	F	T	T	F	T	F	T	F

24.

P	Q	R	$P \vee Q$	$P \supset R$	$\neg Q$	$(P \supset R) \supset P$	$\neg Q \wedge (P \vee Q)$	$[\neg Q \wedge (P \vee Q)] \wedge [(P \supset R) \supset P]$
T	T	T	T	T	F	T	F	F
F	T	T	T	T	F	F	F	F
T	F	F	T	T	T	T	T	T
F	F	T	F	T	T	F	F	F
T	T	F	T	F	T	T	F	T
F	T	F	T	T	F	F	F	F
T	F	T	T	F	T	T	T	T
F	F	F	F	T	T	F	F	F

25.

P	Q	R	$P \vee R$	$P \supset Q$	$P \wedge (P \supset Q)$	$\neg(P \vee R)$	$\neg\neg(P \vee R)$	$\neg\neg(P \vee R) \supset [P \wedge (P \supset Q)]$
T	T	T	T	T	T	F	T	T
T	T	T	T	T	F	F	T	F
T	F	T	T	F	F	F	T	F
F	F	T	T	T	F	F	T	F
T	T	F	T	T	T	F	T	T
F	T	F	F	T	F	T	F	T
T	F	F	F	F	F	T	T	F
F	F	F	F	T	F	T	F	T

26.

P	Q	R	$P \supset R$	$\neg Q$	$(P \supset R) \vee P$	$\neg\neg Q$	$[(P \supset R) \vee P] \supset P$	$\neg\neg Q \wedge \{[(P \supset R) \vee P] \supset P\}$
T	T	T	T	F	T	F	T	T
F	T	T	T	F	T	T	F	F
T	F	T	T	T	T	F	T	F
F	F	T	T	T	T	F	F	F
T	T	F	F	F	T	T	T	T
T	F	F	T	F	T	T	F	F
T	F	F	F	T	T	F	F	F
F	F	F	T	F	T	F	F	F

27.

P	R	$R \supset P$	$\neg R$	$(R \supset P) \wedge \neg R$	$\neg[(R \supset P) \wedge \neg R]$	$\neg\neg[(R \supset P) \wedge \neg R]$	$\neg\neg\neg[(R \supset P) \wedge \neg R]$
T	T	T	F	F	F	F	T
F	T	F	F	F	F	T	T
T	F	F	T	T	F	T	T
F	F	T	T	F	F	T	T

28.

P	Q	R	$P \wedge R$	$Q \wedge P$	$R \wedge Q$	$(P \wedge R) \vee (Q \wedge P)$	$\neg[(P \wedge R) \vee (Q \wedge P)]$	$\neg[(P \wedge R) \vee (Q \wedge P)] \vee (R \wedge Q)$
T	T	T	T	T	T	T	F	T
F	T	F	F	F	T	F	T	T
T	F	T	T	F	F	T	F	F
F	F	T	F	F	F	F	T	T
T	T	F	F	T	F	T	F	F
F	F	F	T	F	F	F	T	T
T	F	F	F	F	T	F	T	T
F	F	F	F	F	F	F	T	T

29.

P	Q	R	$R \supset P$	$\neg Q$	$\neg Q \vee (R \supset P)$	$Q \supset \neg Q$	$[\neg Q \vee (R \supset P)] \wedge (Q \supset \neg Q)$
T	T	T	T	F	T	F	F
F	T	T	T	F	F	F	T
T	F	T	T	T	T	F	T
F	F	T	F	T	T	T	T
F	T	F	T	T	T	F	F
F	T	F	T	T	T	F	F
T	F	F	T	T	T	T	T
F	F	T	T	T	T	T	T

30.

P	$\neg P$	$P \supset \neg P$	$P \wedge (P \supset \neg P)$	$\neg P \wedge [P \wedge (P \supset \neg P)]$	$\neg\{\neg P \wedge [P \wedge (P \supset \neg P)]\}$
T	F	F	F	F	T
T	T	F	F	F	F

31.

P	R	$P \wedge P$	$\neg P$	$\neg R$	$(P \wedge P) \vee \neg P$	$\neg R \supset [(P \wedge P) \vee \neg P]$	$\neg\{\neg R \supset [(P \wedge P) \vee \neg P]\}$
F	F	T	F	F	T	F	F
F	T	F	T	F	T	T	F
T	F	T	F	T	T	F	F
F	F	F	T	T	T	T	F

32.

P	Q	R	$R \supset R$	$Q \wedge P$	$\neg P$	$(R \supset R) \vee Q$	$[(R \supset R) \vee Q] \supset (Q \wedge P)$	$\{[(R \supset R) \vee Q] \supset (Q \wedge P)\} \wedge \neg P$
T	T	T	T	F	F	T	T	F
F	T	T	T	F	T	F	F	T
T	F	T	T	F	F	T	F	F
F	F	T	T	F	F	F	F	F
T	T	F	T	T	F	T	T	F
F	T	F	T	F	T	F	F	F
T	F	F	T	F	F	T	F	F
F	F	F	T	F	F	T	F	T

33.

P	R	$P \vee R$	$R \wedge R$	$\neg R$	$(P \vee R) \supset P$	$\neg R \wedge (R \wedge R)$	$[\neg R \wedge (R \wedge R)] \wedge [(P \vee R) \supset P]$
T	T	T	T	F	T	F	F
F	T	T	T	F	F	T	F
T	F	T	F	T	T	F	F
F	F	F	F	T	T	F	F

34.

P	Q	R	$R \vee Q$	$P \supset P$	$R \wedge Q$	$(R \vee Q) \supset P$	$(R \wedge Q) \supset (P \supset P)$	$[(R \wedge Q) \supset (P \supset P)] \vee [(R \vee Q) \supset P]$
T	T	T	T	T	F	T	T	T
F	T	T	T	T	T	F	T	T
F	F	T	T	T	F	T	T	T
F	F	T	T	T	F	F	T	T
T	T	F	T	T	F	T	T	T
F	T	F	T	T	F	F	T	T
F	F	F	F	T	F	T	T	T
F	T	F	F	T	F	T	T	T

35.

P	Q	R	$P \wedge Q$	$Q \wedge Q$	$\neg R$	$\neg R \wedge (P \wedge Q)$	$\neg[\neg R \wedge (P \wedge Q)]$	$\neg[\neg R \wedge (P \wedge Q)] \wedge (Q \wedge Q)$
T	T	T	T	F	F	F	T	T
F	T	T	F	T	F	F	T	T
T	F	T	F	T	T	F	T	F
F	F	T	F	F	F	F	T	F
T	T	F	T	T	T	T	F	F
F	T	F	F	T	T	F	T	F
T	F	F	F	F	T	F	T	F
F	F	F	F	F	T	F	T	F

36.

P	Q	$P \wedge Q$	$Q \wedge P$	$\neg P$	$(Q \wedge P) \vee (P \wedge Q)$	$\neg P \wedge Q$	$[(Q \wedge P) \vee (P \wedge Q)] \wedge (\neg P \wedge Q)$
F	T	T	T	F	T	F	F
F	T	F	F	T	F	T	T
F	F	F	F	F	F	F	F
F	F	F	F	T	F	F	F

37.

P	Q	R	$P \vee Q$	$P \vee R$	$\neg P$	$\neg P \vee R$	$(\neg P \vee R) \supset (P \vee R)$	$(P \vee Q) \vee [(\neg P \vee R) \supset (P \vee R)]$
T	T	T	T	T	F	T	T	T
F	T	T	T	T	T	T	T	T
T	F	T	T	T	F	T	T	T
F	F	T	T	T	T	T	T	T
T	T	F	T	T	F	F	T	T
F	T	F	T	F	T	T	F	T
T	F	F	T	T	F	T	T	T
F	F	T	F	F	T	T	F	F

38.

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

39.

P	Q	R	$P \vee R$	$Q \vee Q$	$\neg R$	$(Q \vee Q) \vee \neg R$	$(P \vee R) \wedge Q$	$[(P \vee R) \wedge Q] \supset [(Q \vee Q) \vee \neg R]$
T	T	T	T	T	F	T	T	T
F	T	T	T	T	F	T	T	T
T	T	T	T	F	F	F	F	T
F	F	T	T	F	F	F	F	T
T	T	F	T	T	T	T	T	T
F	T	F	F	T	T	T	F	T
T	F	F	T	F	T	T	F	T
F	F	F	F	F	T	T	F	T

40.

Q	R	$R \vee Q$	$\neg R$	$R \wedge \neg R$	$\neg(R \vee Q)$	$\neg(R \vee Q) \wedge (R \wedge \neg R)$	$\neg[\neg(R \vee Q) \wedge (R \wedge \neg R)]$
T	T	T	F	F	F	F	T
F	T	T	F	F	F	T	T
T	F	T	T	F	F	F	T
F	F	F	T	F	T	F	T

41.

P	R	$R \vee P$	$\neg R$	$\neg R \supset P$	$(R \vee P) \wedge \neg R$	$(\neg R \supset P) \supset [(R \vee P) \wedge \neg R]$
T	T	F	F	T	F	F
F	F	T	F	T	F	F
T	F	T	T	T	T	T
F	F	F	T	F	F	F

42.

Q	R	$Q \supset R$	$R \supset R$	$\neg(Q \supset R)$	$\neg(R \supset R)$	$\neg\neg(Q \supset R)$	$\neg(R \supset R) \wedge \neg\neg(Q \supset R)$
F	F	T	T	F	T	T	F
F	T	T	F	F	F	T	F
T	F	F	T	T	F	T	T
F	F	T	T	T	T	T	F

43.

P	Q	R	$Q \vee P$	$R \supset R$	$\neg Q$	$(Q \vee P) \wedge (R \supset R)$	$[(Q \vee P) \wedge (R \supset R)] \supset \neg Q$	$\neg\{[(Q \vee P) \wedge (R \supset R)] \supset \neg Q\}$
T	T	T	T	T	F	T	F	T
F	T	T	T	T	F	T	F	T
T	F	T	T	T	T	T	T	F
F	F	T	F	T	T	F	T	F
T	T	F	T	T	F	T	F	T
F	T	F	T	T	F	T	T	T
T	F	F	T	T	T	T	T	F
F	F	F	F	T	T	F	T	F

44.

P	Q	R	$Q \supset P$	$R \wedge R$	$R \vee (R \wedge R)$	$\neg(Q \supset P)$	$\neg\neg(Q \supset P)$	$\neg\neg(Q \supset P) \vee [R \vee (R \wedge R)]$
T	T	T	T	T	F	F	T	F
F	T	T	F	T	T	T	F	T
T	F	T	T	T	T	F	T	T
F	T	T	T	T	T	T	T	T
T	T	F	T	T	F	F	T	T
F	T	F	F	F	T	T	F	F
T	F	F	T	F	T	F	T	F
F	F	F	T	F	F	F	T	T

45.

P	Q	R	$Q \vee Q$	$R \supset Q$	$R \wedge P$	$(Q \vee Q) \vee (R \supset Q)$	$(R \wedge P) \vee [(Q \vee Q) \vee (R \supset Q)]$	$\neg\{(R \wedge P) \vee [(Q \vee Q) \vee (R \supset Q)]\}$
T	T	T	T	T	T	T	T	F
F	T	T	T	T	F	T	F	F
T	F	T	F	F	T	F	T	F
F	F	T	F	T	F	F	F	T
T	T	F	T	F	F	T	T	F
F	F	F	T	T	F	T	T	F
T	F	F	F	T	F	T	T	F
F	F	T	F	T	T	T	T	F

46.

Q	R	$Q \wedge R$	$\neg Q$	$(Q \wedge R) \wedge \neg Q$
T	T	F	F	F
T	F	T	T	F
T	F	F	T	F
F	F	F	F	F

47.

P	$P \wedge P$	$\neg P$	$\neg\neg P$	$\neg\neg P \vee (P \wedge P)$
T	T	F	T	T
F	T	F	F	F

48.

P	R	$P \supset R$	$R \wedge R$	$\neg(P \supset R)$	$\neg(P \supset R) \supset (R \wedge R)$	$\neg[\neg(P \supset R) \supset (R \wedge R)]$	$\neg\neg[\neg(P \supset R) \supset (R \wedge R)]$
T	T	T	T	F	T	F	T
F	T	F	T	T	T	T	T
T	F	F	T	T	F	T	F
F	F	F	F	T	T	F	F

49.

P	Q	R	$R \vee R$	$Q \wedge P$	$\neg Q$	$(R \vee R) \wedge (Q \wedge P)$	$\neg Q \supset [(R \vee R) \wedge (Q \wedge P)]$	$\neg\{\neg Q \supset [(R \vee R) \wedge (Q \wedge P)]\}$
T	F	T	T	T	F	T	T	F
F	T	T	T	F	F	F	T	F
T	F	T	T	F	T	F	F	T
F	F	T	T	F	T	F	F	T
T	T	F	F	T	F	F	T	F
F	F	F	T	T	F	T	T	F
T	F	F	F	F	T	F	F	T
F	F	F	F	F	F	F	F	T

50.

P	Q	R	$R \vee P$	$R \supset R$	$\neg Q$	$(R \supset R) \wedge \neg Q$	$[(R \supset R) \wedge \neg Q] \vee (R \vee P)$	$\neg\{[(R \supset R) \wedge \neg Q] \vee (R \vee P)\}$
T	F	T	T	T	F	F	T	T
F	T	T	T	T	F	F	T	T
T	F	T	T	T	T	T	T	F
F	F	T	T	T	T	T	T	T
T	T	F	T	T	F	T	T	F
F	T	F	F	T	F	F	F	T
T	F	F	T	T	T	T	T	F
F	F	F	F	T	T	T	T	F

51.

Q	R	$Q \supset Q$	$R \supset R$	$(Q \supset Q) \wedge (R \supset R)$	$[(Q \supset Q) \wedge (R \supset R)] \wedge Q$	$\{[(Q \supset Q) \wedge (R \supset R)] \wedge Q\} \supset (R \supset R)$
T	T	F	T	T	F	F
F	T	T	F	T	F	T
T	T	T	T	F	T	T
F	F	T	T	T	F	T

52.

P	Q	R	$Q \vee R$	$\neg P$	$\neg P \vee Q$	$(Q \vee R) \supset (Q \vee R)$	$[(Q \vee R) \supset (Q \vee R)] \vee (\neg P \vee Q)$
T	T	T	T	F	T	T	T
F	T	T	T	T	T	T	T
T	F	T	T	F	F	T	T
F	F	T	T	F	T	T	T
T	F	F	T	F	T	T	T
T	F	F	T	T	T	T	T
T	F	F	F	F	F	T	T
F	F	F	F	T	T	F	T

53.

P	R	$P \vee R$	$P \supset R$	$(P \vee R) \supset P$	$\neg(P \supset R)$	$R \wedge [(P \vee R) \supset P]$	$\neg(P \supset R) \vee \{R \wedge [(P \vee R) \supset P]\}$
T	T	T	T	T	F	T	T
F	T	T	T	F	F	F	F
T	F	T	F	T	T	F	F
F	F	F	T	T	F	F	F

54.

P	Q	$P \supset P$	$Q \wedge P$	$Q \wedge Q$	$(P \supset P) \supset (Q \wedge P)$	$(Q \wedge Q) \wedge P$	$[(P \supset P) \supset (Q \wedge P)] \wedge [(Q \wedge Q) \wedge P]$
T	F	T	T	T	T	T	T
F	T	T	T	T	F	F	F
T	F	T	F	F	F	F	F
F	F	T	T	F	F	F	T

55.

Q	R	$Q \vee Q$	$Q \supset R$	$R \wedge Q$	$(Q \vee Q) \vee (R \wedge Q)$	$[(Q \vee Q) \vee (R \wedge Q)] \supset (Q \supset R)$	$\neg\{[(Q \vee Q) \vee (R \wedge Q)] \supset (Q \supset R)\}$
T	T	T	T	T	T	T	T
F	T	F	T	F	F	T	F
F	F	T	F	F	T	F	T
F	F	F	T	F	F	T	F

56.

P	Q	R	$R \vee P$	$P \supset P$	$\neg Q$	$P \vee (R \vee P)$	$\neg Q \supset (P \supset P)$	$[P \vee (R \vee P)] \supset [\neg Q \supset (P \supset P)]$
T	T	T	T	T	F	T	T	T
F	T	T	T	T	F	T	T	T
T	F	T	T	T	T	T	T	T
F	F	T	T	T	T	F	T	T
F	T	F	T	T	T	T	T	T
F	T	F	F	T	F	F	T	T
T	F	F	T	T	T	T	T	T
F	F	F	F	F	T	F	T	T

57.

P	Q	$P \wedge Q$	$Q \wedge Q$	$\neg P$	$(P \wedge Q) \supset (Q \wedge Q)$	$\neg P \supset P$	$[(P \wedge Q) \supset (Q \wedge Q)] \vee (\neg P \supset P)$
T	T	T	T	F	T	F	T
F	T	F	T	F	F	F	T
F	F	F	F	F	T	T	F
F	F	F	T	T	T	F	T

58.

P	Q	R	$Q \vee R$	$R \vee R$	$R \supset Q$	$(Q \vee R) \wedge (R \vee R)$	$[(Q \vee R) \wedge (R \vee R)] \wedge (R \supset Q)$	$\{[(Q \vee R) \wedge (R \vee R)] \wedge (R \supset Q)\} \vee P$
T	T	T	T	T	T	T	T	T
F	T	T	T	T	F	T	T	T
T	F	T	T	T	F	T	F	T
F	F	T	T	T	F	T	F	T
T	T	F	T	T	T	F	F	T
F	T	F	F	F	T	F	F	F
T	F	F	F	F	T	F	F	T
F	F	T	F	F	T	T	F	F

59.

P	Q	$P \supset P$	$Q \wedge P$	$\neg P$	$(Q \wedge P) \vee P$	$[(Q \wedge P) \vee P] \vee \neg P$	$(P \supset P) \supset \{[(Q \wedge P) \vee P] \vee \neg P\}$
T	T	T	T	F	T	F	T
F	T	T	T	T	F	T	T
T	F	F	T	F	T	T	T
F	F	T	F	F	T	T	T

60.

P	Q	R	$P \supset R$	$R \supset Q$	$(R \supset Q) \vee P$	$\neg(P \supset R)$	$[(R \supset Q) \vee P] \vee \neg(P \supset R)$	$\neg\{[(R \supset Q) \vee P] \vee \neg(P \supset R)\}$
T	T	T	T	T	T	F	T	F
F	T	F	T	T	T	F	T	F
T	F	T	T	F	T	F	T	F
F	F	T	F	F	F	F	F	T
T	T	T	T	T	T	T	T	F
F	T	F	T	T	T	T	T	F
T	F	F	F	T	F	T	F	F
F	F	F	T	T	T	F	T	F

61.

P	Q	R	$R \vee P$	$R \supset R$	$\neg R$	$(R \supset R) \vee (R \vee P)$	$\neg R \supset Q$	$(\neg R \supset Q) \supset [(R \supset R) \vee (R \vee P)]$
T	T	T	F	T	T	T	T	T
F	T	T	T	T	F	T	T	F
T	F	T	T	T	F	T	T	T
F	T	T	T	T	F	T	T	T
T	T	F	T	T	T	T	T	F
F	T	F	F	T	F	T	T	T
T	F	F	T	T	T	T	F	T
F	F	F	F	T	T	T	F	T

62.

Q	$\neg Q$	$\neg\neg Q$
F	T	F
T	F	T

63.

P	Q	R	$Q \vee R$	$Q \wedge Q$	$R \wedge R$	$(Q \wedge Q) \supset (R \wedge R)$	$[(Q \wedge Q) \supset (R \wedge R)] \vee (Q \vee R)$	$\{[(Q \wedge Q) \supset (R \wedge R)] \vee (Q \vee R)\} \supset P$
F	T	T	T	T	T	T	T	T
F	F	T	T	T	T	T	T	F
T	F	T	T	F	T	T	T	T
F	F	T	T	F	T	T	T	F
T	T	F	T	T	F	F	T	T
T	T	T	T	T	F	F	T	F
T	F	F	F	F	F	F	T	T
F	F	F	F	T	F	T	T	F

64.

P	Q	R	$Q \supset P$	$\neg Q$	$\neg R$	$\neg Q \vee P$	$(\neg Q \vee P) \vee (Q \supset P)$	$[(\neg Q \vee P) \vee (Q \supset P)] \supset \neg R$
T	T	T	T	F	F	T	T	T
F	T	T	F	F	F	F	F	T
T	F	T	T	T	F	T	T	F
F	F	T	T	T	F	T	T	F
T	T	F	T	F	T	T	T	T
F	T	F	F	F	T	F	F	T
T	F	F	T	T	T	T	T	T
F	F	F	T	T	T	T	T	T

65.

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

66.

P	Q	R	$Q \supset Q$	$\neg R$	$\neg R \wedge Q$	$\neg(Q \supset Q)$	$\neg(Q \supset Q) \wedge P$	$[\neg(Q \supset Q) \wedge P] \supset (\neg R \wedge Q)$
T	T	T	T	F	F	F	F	T
F	T	T	F	T	F	F	F	F
T	F	T	T	F	F	F	F	T
F	F	F	T	F	F	F	F	T
T	T	F	T	F	T	F	F	T
F	T	F	T	T	T	F	F	T
T	F	F	T	T	F	F	F	F
F	F	F	T	T	F	F	F	T

67.

P	Q	R	$Q \vee R$	$\neg P$	$(Q \vee R) \supset P$	$\neg P \supset R$	$[(Q \vee R) \supset P] \vee (\neg P \supset R)$	$\neg\{[(Q \vee R) \supset P] \vee (\neg P \supset R)\}$
T	T	T	T	F	T	F	T	F
F	T	T	T	T	F	F	T	F
T	F	T	T	F	T	T	T	F
F	T	T	T	T	F	T	T	F
T	T	F	T	F	T	T	T	F
F	T	F	T	T	F	F	F	T
T	F	F	F	F	T	F	T	T
F	T	F	F	T	T	F	T	F

68.

P	Q	R	$R \vee R$	$P \wedge Q$	$Q \wedge R$	$(P \wedge Q) \wedge (R \vee R)$	$P \wedge (Q \wedge R)$	$[P \wedge (Q \wedge R)] \wedge [(P \wedge Q) \wedge (R \vee R)]$
T	T	T	T	T	T	T	T	T
F	T	T	T	F	F	F	F	F
T	F	T	F	F	F	F	F	F
F	F	T	T	F	F	F	F	F
T	T	F	F	T	F	F	F	F
F	T	T	F	F	F	F	F	F
T	F	F	F	F	F	F	F	F
F	F	F	F	T	F	F	F	F

69.

P	R	$P \vee R$	$P \wedge P$	$(P \wedge P) \wedge R$	$P \wedge (P \vee R)$	$[P \wedge (P \vee R)] \supset R$	$\{[P \wedge (P \vee R)] \supset R\} \supset [(P \wedge P) \wedge R]$
T	F	T	F	T	T	F	T
F	T	F	F	F	F	T	F
T	F	T	F	F	F	T	T
F	F	F	F	F	F	T	F

70.

P	R	$R \vee P$	$P \supset P$	$\neg(R \vee P)$	$\neg(P \supset P)$	$\neg(P \supset P) \wedge R$	$[\neg(P \supset P) \wedge R] \vee \neg(R \vee P)$
T	F	T	F	F	F	T	F
F	T	T	T	F	T	F	F
T	F	F	F	F	F	F	F
F	F	F	T	T	F	F	F

71.

P	Q	R	$P \supset Q$	$P \wedge Q$	$R \wedge R$	$(P \wedge Q) \supset (P \supset Q)$	$\neg(R \wedge R)$	$[(P \wedge Q) \supset (P \supset Q)] \wedge \neg(R \wedge R)$
T	T	T	T	T	T	T	F	F
F	T	T	T	F	T	T	F	F
T	F	T	F	F	T	T	F	F
F	F	T	T	T	T	T	F	F
T	T	F	T	F	F	T	T	T
F	T	F	T	F	F	T	T	T
T	F	F	F	F	F	T	T	T
F	F	F	T	F	F	T	T	T

72.

P	Q	R	$Q \vee P$	$Q \supset P$	$(Q \vee P) \wedge R$	$\neg(Q \supset P)$	$[(Q \vee P) \wedge R] \wedge \neg(Q \supset P)$	$\neg\{[(Q \vee P) \wedge R] \wedge \neg(Q \supset P)\}$
T	T	T	T	T	T	F	T	T
F	T	T	T	T	T	T	T	F
T	F	T	T	T	T	F	F	T
F	F	T	F	T	F	F	F	T
T	T	F	T	T	F	F	T	T
T	T	F	T	F	F	F	F	T
T	F	F	T	T	F	F	F	T
F	F	F	F	F	F	F	F	T

73.

P	Q	R	$P \supset Q$	$R \supset P$	$\neg P$	$(P \supset Q) \wedge (R \supset P)$	$\neg P \wedge R$	$(\neg P \wedge R) \vee [(P \supset Q) \wedge (R \supset P)]$
T	T	T	T	T	F	T	F	T
F	T	T	T	F	T	F	T	T
T	F	T	F	T	F	F	F	F
T	F	T	T	F	T	F	T	F
T	T	F	T	T	F	T	F	T
F	T	F	T	T	T	T	F	T
F	F	F	F	T	T	F	F	F
F	F	F	T	F	T	T	F	T

74.

P	Q	R	$P \vee P$	$\neg Q$	$\neg Q \vee Q$	$R \supset (P \vee P)$	$\neg[R \supset (P \vee P)]$	$\neg[R \supset (P \vee P)] \wedge (\neg Q \vee Q)$
T	T	T	T	F	T	T	F	T
F	T	T	F	F	T	F	T	T
T	F	T	T	T	T	T	T	F
F	F	T	T	T	F	F	T	T
F	T	F	T	F	T	T	F	T
F	T	F	F	F	T	T	F	F
T	F	F	T	T	T	T	F	F
F	F	F	F	T	T	T	F	F

75.

P	R	$P \vee P$	$R \supset P$	$\neg P$	$P \wedge \neg P$	$(P \wedge \neg P) \supset (P \vee P)$	$[(P \wedge \neg P) \supset (P \vee P)] \supset (R \supset P)$
T	T	T	T	F	F	F	F
F	T	F	F	T	F	F	F
T	F	T	T	F	F	T	T
F	F	F	T	T	F	F	T

76.

P	Q	R	$P \vee Q$	$P \supset R$	$\neg Q$	$(P \supset R) \wedge (P \vee Q)$	$\neg \neg Q$	$\neg \neg Q \wedge [(P \supset R) \wedge (P \vee Q)]$
T	T	T	T	T	F	T	T	T
F	T	T	T	T	F	T	T	T
T	F	T	T	T	T	T	F	F
F	T	T	F	T	T	F	F	F
T	T	F	T	F	F	T	T	F
F	T	F	T	T	F	T	T	T
T	F	F	T	F	T	F	F	F
F	F	F	F	F	T	F	F	F

77.

P	Q	$P \supset P$	$P \wedge Q$	$\neg Q$	$(P \wedge Q) \wedge \neg Q$	$\neg[(P \wedge Q) \wedge \neg Q]$	$\neg[(P \wedge Q) \wedge \neg Q] \supset (P \supset P)$
T	T	T	T	F	F	F	T
F	T	F	F	F	F	T	T
T	F	T	F	T	F	T	T
T	F	T	T	T	F	T	T

78.

P	Q	R	$R \vee R$	$Q \supset P$	$\neg P$	$\neg P \supset (Q \supset P)$	$(R \vee R) \wedge R$	$[\neg P \supset (Q \supset P)] \wedge [(R \vee R) \wedge R]$
T	T	T	T	T	F	T	T	T
F	T	T	T	T	T	F	T	F
T	F	T	T	T	F	T	T	T
F	F	T	T	T	T	T	T	T
T	T	F	F	T	F	T	F	F
F	T	F	F	F	T	F	F	F
T	F	F	T	T	F	F	F	T
F	F	F	F	T	T	T	F	F

79.

P	Q	R	$P \supset Q$	$\neg Q$	$\neg R$	$\neg Q \supset (P \supset Q)$	$[\neg Q \supset (P \supset Q)] \supset \neg R$	$\neg\{[\neg Q \supset (P \supset Q)] \supset \neg R\}$
T	T	T	T	F	F	T	F	T
F	T	T	T	F	F	T	F	T
T	F	T	F	T	F	F	T	F
F	F	T	T	T	F	T	F	T
T	T	F	T	F	T	T	T	F
T	T	F	T	F	T	T	T	F
T	F	F	F	T	T	F	T	F
F	F	F	T	T	T	F	T	F

80.

P	R	$R \vee R$	$P \wedge P$	$\neg(R \vee R)$	$\neg(P \wedge P)$	$\neg\neg(R \vee R)$	$\neg\neg(R \vee R) \vee \neg(P \wedge P)$
T	T	T	T	F	F	T	F
F	T	T	F	F	T	T	T
T	F	T	T	T	F	F	F
F	F	F	F	T	T	F	T

81.

P	Q	R	$R \vee R$	$P \supset R$	$(P \supset R) \supset Q$	$\neg(R \vee R)$	$\neg\neg(R \vee R)$	$\neg\neg(R \vee R) \vee [(P \supset R) \supset Q]$
T	T	T	T	T	T	F	T	T
F	F	T	T	T	T	F	T	T
T	F	T	T	T	F	F	T	T
F	F	T	T	T	F	F	T	T
T	T	F	F	F	T	T	F	T
F	T	F	F	T	T	T	F	T
F	F	F	F	F	T	T	F	T
F	F	F	F	T	F	T	F	F

82.

P	Q	$P \vee Q$	$Q \wedge Q$	$(P \vee Q) \supset Q$	$[(P \vee Q) \supset Q] \wedge (Q \wedge Q)$	$\neg\{[(P \vee Q) \supset Q] \wedge (Q \wedge Q)\}$	$\neg\neg\{[(P \vee Q) \supset Q] \wedge (Q \wedge Q)\}$
T	T	T	T	T	T	F	T
F	T	T	T	T	T	F	T
T	F	T	F	F	F	T	F
F	F	F	F	F	F	T	F

83.

P	Q	R	$Q \vee Q$	$R \vee P$	$(Q \vee Q) \wedge P$	$(R \vee P) \wedge P$	$[(R \vee P) \wedge P] \vee [(Q \vee Q) \wedge P]$	$\neg\{[(R \vee P) \wedge P] \vee [(Q \vee Q) \wedge P]\}$
T	T	T	T	T	T	T	T	F
F	T	T	T	T	F	F	F	T
T	F	F	F	T	F	T	T	F
F	F	T	F	T	F	F	F	T
F	T	F	T	F	T	T	T	F
F	T	F	T	F	F	F	F	T
F	F	F	F	T	F	F	T	F
F	F	F	T	F	F	F	F	T

84.

P	R	$R \supset R$	$\neg R$	$\neg R \supset P$	$(\neg R \supset P) \vee (R \supset R)$	$(R \supset R) \vee [(\neg R \supset P) \vee (R \supset R)]$
F	T	T	T	F	T	T
F	T	T	F	T	T	T
F	F	T	T	T	T	F
F	T	F	T	F	T	T

85.

P	Q	R	$P \supset R$	$\neg P$	$\neg Q$	$R \supset (P \supset R)$	$\neg P \wedge \neg Q$	$[R \supset (P \supset R)] \supset (\neg P \wedge \neg Q)$
T	T	T	T	F	F	T	F	F
F	T	T	T	T	F	T	F	F
T	F	T	T	F	T	F	F	F
F	F	T	T	T	T	T	T	T
T	T	F	F	F	F	T	F	F
F	T	F	T	T	F	T	F	F
T	F	F	T	F	T	T	F	F
T	F	F	T	T	T	T	T	T

86.

P	Q	R	$P \wedge P$	$R \wedge P$	$\neg Q$	$P \supset (R \wedge P)$	$\neg Q \wedge (P \wedge P)$	$[P \supset (R \wedge P)] \wedge [\neg Q \wedge (P \wedge P)]$
T	T	T	T	T	F	T	F	F
T	T	T	F	F	F	T	F	F
T	F	T	F	F	F	T	T	T
F	F	T	F	F	T	T	F	F
F	T	F	T	F	F	F	F	F
F	T	F	F	F	F	T	F	F
T	F	F	T	F	T	T	T	F
F	F	F	F	F	T	T	T	F

87.

P	R	$P \vee R$	$R \wedge P$	$R \wedge R$	$P \vee (R \wedge R)$	$(P \vee R) \supset (R \wedge P)$	$[P \vee (R \wedge R)] \wedge [(P \vee R) \supset (R \wedge P)]$
T	T	T	T	T	T	T	T
F	T	T	F	T	T	F	F
T	F	T	F	F	T	F	F
T	T	F	F	F	F	T	F

88.

P	Q	$Q \vee Q$	$Q \supset Q$	$\neg P$	$P \wedge (Q \supset Q)$	$[P \wedge (Q \supset Q)] \wedge (Q \vee Q)$	$\{[P \wedge (Q \supset Q)] \wedge (Q \vee Q)\} \vee \neg P$
F	T	T	T	F	T	T	T
F	T	T	T	T	F	F	T
T	F	F	T	F	T	F	F
F	F	F	F	F	T	F	T

89.

P	Q	R	$Q \wedge R$	$R \wedge Q$	$\neg P$	$(Q \wedge R) \supset \neg P$	$(R \wedge Q) \supset Q$	$[(Q \wedge R) \supset \neg P] \supset [(R \wedge Q) \supset Q]$
T	T	T	T	T	F	F	T	T
F	T	T	T	F	F	T	T	T
T	F	T	F	F	F	T	T	T
F	F	T	F	F	T	T	T	T
T	F	F	F	F	F	T	T	T
F	T	F	T	T	T	T	T	T
T	F	F	F	F	F	T	T	T
F	F	F	F	F	T	T	T	T

90.

P	Q	R	$P \vee R$	$R \vee Q$	$\neg P$	$\neg P \vee (R \vee Q)$	$(P \vee R) \wedge R$	$[\neg P \vee (R \vee Q)] \vee [(P \vee R) \wedge R]$
T	T	T	T	T	F	T	T	T
F	F	T	T	T	T	T	T	T
T	F	T	T	F	F	T	T	T
T	F	T	T	T	T	T	T	T
T	T	F	T	T	T	T	T	F
F	T	T	F	T	T	T	F	T
T	F	F	T	F	F	F	F	F
F	F	F	F	T	T	T	F	T

91.

P	Q	R	$R \wedge R$	$\neg P$	$\neg P \vee Q$	$(R \wedge R) \supset \neg P$	$[(R \wedge R) \supset \neg P] \supset (\neg P \vee Q)$
T	T	T	T	F	T	F	T
F	T	T	T	T	T	T	T
T	F	T	T	F	F	F	T
F	F	T	F	T	T	T	T
T	T	F	F	T	T	T	T
F	T	F	F	T	T	T	T
T	F	T	F	F	F	F	F
F	F	F	F	T	F	T	F

92.

P	Q	$Q \vee Q$	$P \wedge P$	$\neg Q$	$Q \wedge \neg Q$	$(Q \vee Q) \vee (Q \wedge \neg Q)$	$[(Q \vee Q) \vee (Q \wedge \neg Q)] \wedge (P \wedge P)$
T	T	F	F	F	F	T	F
F	T	T	F	F	F	T	F
T	F	T	F	F	T	F	F
F	F	F	F	T	F	F	F

93.

P	Q	$P \vee Q$	$Q \supset P$	$P \supset (P \vee Q)$	$\neg(Q \supset P)$	$\neg(Q \supset P) \supset P$	$[P \supset (P \vee Q)] \vee [\neg(Q \supset P) \supset P]$
F	T	T	T	T	F	T	F
F	T	T	F	T	T	F	T
T	F	T	F	T	T	T	T
F	F	F	T	T	F	T	F

94.

P	Q	$Q \vee Q$	$\neg P$	$\neg Q$	$(Q \vee Q) \wedge P$	$\neg Q \wedge \neg P$	$[(Q \vee Q) \wedge P] \supset (\neg Q \wedge \neg P)$
T	T	T	F	F	F	F	F
F	T	T	T	F	T	T	F
F	F	F	F	T	T	F	T
F	F	F	T	T	T	T	T

95.

P	Q	R	$P \vee R$	$\neg Q$	$Q \wedge \neg Q$	$\neg(P \vee R)$	$\neg(P \vee R) \wedge P$	$[\neg(P \vee R) \wedge P] \vee (Q \wedge \neg Q)$
T	T	T	T	F	F	F	F	F
F	T	T	T	F	F	F	F	F
T	F	T	T	T	F	F	F	F
F	F	T	T	T	F	F	F	F
T	T	F	T	F	F	F	F	T
F	T	F	F	F	F	T	F	F
T	F	F	T	T	F	F	F	F
F	F	F	F	T	F	F	F	F

96.

P	Q	R	$R \vee P$	$Q \supset Q$	$P \wedge R$	$(R \vee P) \vee (P \wedge R)$	$\neg(Q \supset Q)$	$\neg(Q \supset Q) \wedge [(R \vee P) \vee (P \wedge R)]$
T	T	T	T	T	T	T	F	F
F	T	T	T	T	F	T	F	F
T	F	T	T	T	T	T	F	F
F	F	T	T	T	F	T	F	F
T	T	F	T	T	F	T	F	F
F	T	F	T	T	F	F	F	F
T	F	F	F	F	F	T	F	T
T	F	F	F	T	F	F	F	F

97.

P	Q	R	$P \vee P$	$Q \vee Q$	$P \supset Q$	$(Q \vee Q) \vee (P \supset Q)$	$(P \vee P) \supset R$	$[(P \vee P) \supset R] \supset [(Q \vee Q) \vee (P \supset Q)]$
T	T	T	F	T	T	T	T	T
F	T	T	F	T	T	T	T	T
T	F	T	T	T	F	F	F	F
F	F	T	F	F	T	T	T	T
T	T	F	T	T	T	T	F	T
F	T	F	F	F	T	T	T	T
T	F	F	F	T	F	F	F	T
F	F	F	F	F	T	T	T	T

98.

Q	R	$Q \vee Q$	$R \vee Q$	$Q \supset R$	$Q \wedge (Q \supset R)$	$[Q \wedge (Q \supset R)] \wedge (R \vee Q)$	$\{[Q \wedge (Q \supset R)] \wedge (R \vee Q)\} \wedge (Q \vee Q)$
T	T	T	T	T	T	T	T
F	F	T	T	T	F	F	F
T	F	F	T	F	F	F	T
F	F	F	F	T	F	F	F

99.

P	R	$P \vee R$	$R \supset R$	$\neg R$	$(P \vee R) \vee (R \supset R)$	$\neg R \vee R$	$(\neg R \vee R) \supset [(P \vee R) \vee (R \supset R)]$
F	T	F	F	F	T	F	T
F	T	F	T	T	F	T	T
T	F	T	T	T	T	T	T
F	F	F	T	T	F	T	T

100.

P	Q	R	$Q \vee P$	$Q \wedge R$	$\neg R$	$(Q \wedge R) \vee Q$	$\neg R \wedge (Q \vee P)$	$[\neg R \wedge (Q \vee P)] \wedge [(Q \wedge R) \vee Q]$
T	F	T	T	T	F	F	F	F
F	T	F	T	T	F	T	F	F
T	F	T	T	F	F	F	F	F
F	F	T	F	F	F	F	F	F
T	T	F	T	F	T	T	T	T
F	T	T	T	F	T	T	T	T
T	F	T	T	F	T	F	T	F
F	F	F	F	F	T	T	F	T