Complete the truth tables.

1.

P	Q	Q∧Q	¬Q	P∧(Q∧Q)	[P∧(Q∧Q)]∨¬Q	¬{[P∧(Q∧Q)]∨¬Q}	¬¬{[P∧(Q∧Q)]∨¬Q}
T	T	T	F	T	T	F	T
F	T	T	F	F	F	T	F
T	F	F	T	F	T	F	T
F	F	F	T	F	T	F	T

2.

P	Q	R	P∧Q	R∧P	(R∧P)∧Q	[(R∧P)∧Q]∧(P∧Q)	¬{[(R∧P)∧Q]∧(P∧Q)}	¬¬{[(R∧P)∧Q]∧(P∧Q)}
T	T	T	T	T	T	T	F	T
F	T	T	F	F	F	F	T	F
T	F	T	F	T	F	F	T	F
F	F	T	F	F	F	F	T	F
T	T	F	T	F	F	F	T	F
F	T	F	F	F	F	F	T	F
T	F	F	F	F	F	F	T	F
F	F	F	F	F	F	F	T	F

3.

Q	R	Q∨R	¬Q	¬(Q∨R)	¬¬Q	¬¬(Q∨R)	¬¬(Q∨R)∨¬¬Q
T	T	T	F	F	T	T	T
F	T	T	T	F	F	T	T
T	F	T	F	F	T	T	T
F	F	F	T	T	F	F	F

4.

P	Q	R	Q∨P	R∨Q	Q∧(Q∨P)	¬(R∨Q)	[Q∧(Q∨P)]∧Q	{[Q∧(Q∨P)]∧Q}∨¬(R∨Q)
T	T	T	T	T	T	F	T	T
F	T	T	T	T	T	F	T	T
T	F	T	T	T	F	F	F	F
F	F	T	F	T	F	F	F	F
T	T	F	T	T	T	F	T	T
F	T	F	T	T	T	F	T	T
T	F	F	T	F	F	T	F	T
F	F	F	F	F	F	T	F	T

5.

P	Q	R	P∧R	Q∧P	R∧P	(Q∧P)∧(P∧R)	¬(R∧P)	¬(R∧P)∨[(Q∧P)∧(P∧R)]
T	T	T	T	T	T	T	F	T
F	T	T	F	F	F	F	T	T
T	F	T	T	F	T	F	F	F
F	F	T	F	F	F	F	T	T
T	T	F	F	T	F	F	T	T
F	T	F	F	F	F	F	T	T
T	F	F	F	F	F	F	T	T
F	F	F	F	F	F	F	T	T

6.

1

P	Q	R	Q∨P	P∧P	P∧Q	(Q∨P)∨R	(P∧P)∨(P∧Q)	[(P∧P)∨(P∧Q)]∧[(Q∨P)∨R]
T	T	T	T	T	T	T	T	T
F	T	T	T	F	F	T	F	F
T	F	T	T	T	F	T	T	T
F	F	T	F	F	F	T	F	F
T	T	F	T	T	T	T	T	T
F	T	F	T	F	F	T	F	F
T	F	F	T	T	F	T	T	T
F	F	F	F	F	F	F	F	F

7.

P	Q	P∨Q	Q∧P	¬P	¬P∨(Q∧P)	¬(P∨Q)	[¬P∨(Q∧P)]∧¬(P∨Q)
T	T	T	T	F	T	F	F
F	T	T	F	T	T	F	F
T	F	T	F	F	F	F	F
F	F	F	F	T	T	T	T

8.

P	Q	R	P∧Q	Q∧R	¬R	(Q∧R)∨(P∧Q)	¬¬R	¬¬R∨[(Q∧R)∨(P∧Q)]
T	T	T	T	T	F	T	T	T
F	T	T	F	T	F	T	T	T
T	F	T	F	F	F	F	T	T
F	F	T	F	F	F	F	T	T
T	T	F	T	F	T	T	F	T
F	T	F	F	F	T	F	F	F
T	F	F	F	F	T	F	F	F
F	F	F	F	F	T	F	F	F

9.

P	Q	R	P∨Q	Q∧Q	¬R	¬¬R	¬¬R∧(P∨Q)	(Q∧Q)∧[¬¬R∧(P∨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	F
F	F	T	F	F	F	T	F	F
T	T	F	T	T	T	F	F	F
F	T	F	T	T	T	F	F	F
T	F	F	T	F	T	F	F	F
F	F	F	F	F	T	F	F	F

10.

P	Q	R	R∧Q	¬P	¬(R∧Q)	¬¬P	¬¬(R∧Q)	¬¬(R∧Q)∧¬¬P
T	T	T	T	F	F	T	T	T
F	T	T	T	T	F	F	T	F
T	F	T	F	F	T	T	F	F
F	F	T	F	T	T	F	F	F
T	T	F	F	F	T	T	F	F
F	T	F	F	T	T	F	F	F
T	F	F	F	F	T	T	F	F
F	F	F	F	T	T	F	F	F

11.

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

12.

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

13.

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

14.

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

15.

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

16.

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

17.

P	R	P ∨ R	R ∨ R	R ∧ P	(R ∧ P) ∨ (P ∨ R)	¬[(R ∧ P) ∨ (P ∨ R)]	¬[(R ∧ P) ∨ (P ∨ R)] ∨ (R ∨ R)
T	T	T	T	T	T	F	T
F	T	T	T	F	T	F	T
T	F	T	F	F	T	F	F
F	F	F	F	F	F	T	T

18.

P	Q	R	P ∨ R	¬Q	(P ∨ R) ∨ R	P ∧ ¬Q	¬[(P ∨ R) ∨ R]	¬[(P ∨ R) ∨ R] ∨ (P ∧ ¬Q)
T	T	T	T	F	T	F	F	F
F	T	T	T	F	T	F	F	F
T	F	T	T	T	T	T	F	T
F	F	T	T	T	T	F	F	F
T	T	F	T	F	T	F	F	F
F	T	F	F	F	F	F	T	T
T	F	F	T	T	T	T	F	T
F	F	F	F	T	F	F	T	T

19.

Q	R	¬R	¬R ∧ Q	¬¬R	¬¬¬R	¬¬¬R ∧ (¬R ∧ Q)
T	T	F	F	T	F	F
F	T	F	F	T	F	F
T	F	T	T	F	T	T
F	F	T	F	F	T	F

20.

Q	R	Q ∨ R	Q ∧ R	R ∧ R	(Q ∨ R) ∨ (Q ∧ R)	(R ∧ R) ∨ Q	[(Q ∨ R) ∨ (Q ∧ R)] ∧ [(R ∧ R) ∨ Q]
T	T	T	T	T	T	T	T
F	T	T	F	T	T	T	T
T	F	T	F	F	T	T	T
F	F	F	F	F	F	F	F

21.

P	Q	R	R ∧ P	¬P	¬Q	¬P ∨ (R ∧ P)	Q ∧ [¬P ∨ (R ∧ P)]	¬Q ∨ {Q ∧ [¬P ∨ (R ∧ P)]}
T	T	T	T	F	F	T	T	T
F	T	T	F	T	F	T	T	T
T	F	T	T	F	T	T	F	T
F	F	T	F	T	T	T	F	T
T	T	F	F	F	F	F	F	F
F	T	F	F	T	F	T	T	T
T	F	F	F	F	T	F	F	T
F	F	F	F	T	T	T	F	T

22.

P	R	P ∨ P	P ∧ P	¬P	(P ∨ P) ∧ R	(P ∧ P) ∧ ¬P	[(P ∧ P) ∧ ¬P] ∨ [(P ∨ P) ∧ R]
T	T	T	T	F	T	F	T
F	T	F	F	T	F	F	F
T	F	T	T	F	F	F	F
F	F	F	F	T	F	F	F

23.

P	Q	R	$P \lor P$	$R \lor Q$	$R \land R$	$(R \land R) \lor (R \lor Q)$	$Q \lor (P \lor P)$	$[(R \land R) \lor (R \lor Q)] \land [Q \lor (P \lor P)]$
T	T	T	T	T	T	T	T	T
F	T	T	F	T	T	T	T	T
T	F	T	T	T	T	T	T	T
F	F	T	F	T	T	T	F	F
T	T	F	T	T	F	T	T	T
F	T	F	F	T	F	T	T	T
T	F	F	T	F	F	F	T	F
F	F	F	F	F	F	F	F	F

24.

P	Q	R	$R \lor P$	$\neg Q$	$(R \lor P) \land Q$	$\neg Q \lor [(R \lor P) \land Q]$	$\{\neg Q \lor [(R \lor P) \land Q]\} \land Q$	$\neg\big(\{\neg Q \lor [(R \lor P) \land Q]\}...$
T	T	T	T	F	T	T	T	F
F	T	T	T	F	T	T	T	F
T	F	T	T	T	F	T	F	T
F	F	T	T	T	F	T	F	T
T	T	F	T	F	T	T	T	F
F	T	F	F	F	F	F	F	T
T	F	F	T	T	F	T	F	T
F	F	F	F	T	F	T	F	T

25.

P	Q	R	$P \lor R$	$\neg P$	$Q \lor \neg P$	$\neg(P \lor R)$	$\neg(Q \lor \neg P)$	$\neg(Q \lor \neg P) \lor \neg(P \lor R)$
T	T	T	T	F	T	F	F	F
F	T	T	T	T	T	F	F	F
T	F	T	T	F	F	F	T	T
F	F	T	T	T	T	F	F	F
T	T	F	T	F	T	F	F	F
F	T	F	F	T	T	T	F	T
T	F	F	T	F	F	F	T	T
F	F	F	F	T	T	T	F	T

26.

Q	R	$R \land Q$	$\neg Q$	$\neg R$	$\neg R \lor \neg Q$	$(R \land Q) \land R$	$(\neg R \lor \neg Q) \land [(R \land Q) \land R]$
T	T	T	F	F	F	T	F
F	T	F	T	F	T	F	F
T	F	F	F	T	T	F	F
F	F	F	T	T	T	F	F

27.

Q	$Q \land Q$	$\neg(Q \land Q)$
T	T	F
F	F	T

28.

Q	R	$Q \lor Q$	$R \land R$	$\neg Q$	$(R \land R) \lor \neg Q$	$\neg(Q \lor Q)$	$\neg(Q \lor Q) \lor [(R \land R) \lor \neg Q]$
T	T	T	T	F	T	F	T
F	T	F	T	T	T	T	T
T	F	T	F	F	F	F	F
F	F	F	F	T	T	T	T

29.

Q	R	R ∨ Q	¬Q	¬(R ∨ Q)	¬Q ∧ ¬(R ∨ Q)	¬[¬Q ∧ ¬(R ∨ Q)]	¬¬[¬Q ∧ ¬(R ∨ Q)]
T	T	T	F	F	F	T	F
F	T	T	T	F	F	T	F
T	F	T	F	F	F	T	F
F	F	F	T	T	T	F	T

30.

P	R	¬P	¬R	¬P ∨ R	¬¬R	¬(¬P ∨ R)	¬(¬P ∨ R) ∧ ¬¬R
T	T	F	F	T	T	F	F
F	T	T	F	T	T	F	F
T	F	F	T	F	F	T	F
F	F	T	T	T	F	F	F

31.

Q	R	¬Q	¬R	¬Q ∨ ¬R	¬¬R	¬¬R ∧ (¬Q ∨ ¬R)
T	T	F	F	F	T	F
F	T	T	F	T	T	T
T	F	F	T	T	F	F
F	F	T	T	T	F	F

32.

Q	R	R ∨ Q	Q ∧ R	R ∧ Q	(Q ∧ R) ∨ (R ∧ Q)	Q ∨ (R ∨ Q)	[(Q ∧ R) ∨ (R ∧ Q)] ∨ [Q ∨ (R ∨ Q)]
T	T	T	T	T	T	T	T
F	T	T	F	F	F	T	T
T	F	T	F	F	F	T	T
F	F	F	F	F	F	F	F

33.

P	Q	R	R ∨ Q	P ∧ P	¬Q	(P ∧ P) ∨ ¬Q	R ∧ (R ∨ Q)	[(P ∧ P) ∨ ¬Q] ∨ [R ∧ (R ∨ Q)]
T	T	T	T	T	F	T	T	T
F	T	T	T	F	F	F	T	T
T	F	T	T	T	T	T	T	T
F	F	T	T	F	T	T	T	T
T	T	F	T	T	F	T	F	T
F	T	F	T	F	F	F	F	F
T	F	F	F	T	T	T	F	T
F	F	F	F	F	T	T	F	T

34.

P	Q	R	P ∨ Q	P ∨ R	¬R	(P ∨ R) ∧ (P ∨ Q)	[(P ∨ R) ∧ (P ∨ Q)] ∧ ¬R	¬{[(P ∨ R) ∧ (P ∨ Q)] ∧ ¬R}
T	T	T	T	T	F	T	F	T
F	T	T	T	T	F	T	F	T
T	F	T	T	T	F	T	F	T
F	F	T	F	T	F	F	F	T
T	T	F	T	T	T	T	T	F
F	T	F	T	T	T	F	F	T
T	F	F	T	T	T	T	T	F
F	F	F	F	F	T	F	F	T

35.

P	Q	R	P∧P	R∧P	R∧Q	(R∧P)∨P	(P∧P)∧(R∧Q) ‖ [(P∧P)∧(R∧Q)]∨[(R∧P)∨P]
T	(T)	T	(T)	T	T	(T)	(T)	(T)
F	(T)	T	(F)	F	T	(F)	(F)	(F)
T	(F)	T	(T)	T	F	(T)	(F)	(T)
F	(F)	T	(F)	F	F	(F)	(F)	(F)
T	(T)	F	(T)	F	F	(T)	(F)	(T)
F	(T)	F	(F)	F	F	(F)	(F)	(F)
T	(F)	F	(T)	F	F	(T)	(F)	(T)
F	(F)	F	(F)	F	F	(F)	(F)	(F)

36.

Q	R	¬Q	¬R	¬Q∧¬R	(¬Q∧¬R)∧¬Q ‖ ¬[(¬Q∧¬R)∧¬Q]
T	T	F	F	F	F	T
(F)	(T)	(T)	(F)	(F)	(F)	(T)
T	F	F	T	F	F	T
F	F	T	T	T	T	F

37.

P	Q	P∧P	¬P	¬Q	¬P∧(P∧P)	¬¬Q ‖ [¬P∧(P∧P)]∨¬¬Q
(T)	(T)	(T)	(F)	(F)	(F)	(T)	(T)
F	T	F	T	F	F	T	T
(T)	(F)	(T)	(F)	(T)	(F)	(F)	(F)
(F)	(F)	(F)	(T)	(T)	(F)	(F)	(F)

38.

Q	R	R∨Q	Q∧R	¬R	¬R∨(R∨Q)	¬(Q∧R) ‖ [¬R∨(R∨Q)]∨¬(Q∧R)
(T)	T	T	(T)	F	(T)	F	T
(F)	T	T	(F)	F	(T)	T	T
(T)	F	T	(F)	T	(T)	T	T
(F)	F	F	(F)	T	(T)	T	T

39.

P	Q	R	¬P	¬Q	¬P∧R	¬Q∧P	(¬Q∧P)∧(¬P∧R) ‖ ¬[(¬Q∧P)∧(¬P∧R)]
(T)	(T)	(T)	(F)	(F)	(F)	(F)	(F)	(T)
(F)	(T)	(T)	(T)	(F)	(T)	(F)	(F)	(T)
(T)	(F)	(T)	(F)	(T)	(F)	(T)	(F)	(T)
(F)	(F)	(T)	(T)	(T)	(T)	(F)	(F)	(T)
(T)	(T)	(F)	(F)	(F)	(F)	(F)	(F)	(T)
F	T	F	T	F	F	F	F	T
T	F	F	F	T	F	T	F	T
F	F	F	T	T	F	F	F	T

40.

P	Q	R	Q∧Q	¬R	¬R∨R	(Q∧Q)∧P	(¬R∨R)∧R ‖ [(Q∧Q)∧P]∧[(¬R∨R)∧R]
(T)	(T)	(T)	(T)	(F)	T	(T)	(T)	(T)
(F)	(T)	(T)	(T)	(F)	T	(F)	(T)	(F)
(T)	(F)	(T)	(F)	(F)	T	(F)	(T)	(F)
(F)	(F)	(T)	(F)	(F)	T	(F)	(T)	(F)
(T)	(T)	(F)	(T)	(T)	T	(T)	(F)	(F)
(F)	(T)	(F)	(T)	(T)	T	(F)	(F)	(F)
(T)	(F)	(F)	(F)	(T)	T	(F)	(F)	(F)
(F)	(F)	(F)	(F)	(T)	T	(F)	(F)	(F)

41.

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

42.

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

43.

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

44.

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

45.

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

46.

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

47.

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

48.

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

49.

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

50.

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