

$$1) (\sim p \vee \sim q) \wedge p = \text{V} //$$

$$F \vee V = \wedge V$$

$$4) (p \vee \sim q) \wedge q = \text{F} //$$

$$V \wedge F$$

$$2) (p \vee \sim q) \wedge p = \text{V} //$$

$$V \vee V = \wedge V$$

$$5) (\sim p \wedge q) \vee \sim p = \text{F} //$$

$$F \vee F$$

$$3) (\sim p \wedge (p \wedge \sim q)) = \text{F} //$$

$$F \wedge (V)$$

①

p	q	$\sim q$	$q \wedge \sim q$
V	V	F	F
V	F	V	F
F	V	F	F
F	F	V	F

②

p	q	$\sim p$	$\sim q$	$\sim p \vee q$	$(\sim p, q) \wedge p$
V	V	F	F	V	V
V	F	F	V	F	F
F	V	V	F	V	F
F	F	V	V	V	F

③

p	q	$\sim p$	$\sim q$	$\sim p \vee q$
V	V	F	F	F
V	F	F	V	F
F	V	V	F	F
F	F	V	V	V

④

p	q	$\sim p$	$\sim q$	$\sim p \vee \sim q$
V	V	F	F	F
V	F	F	V	V
F	V	V	F	V
F	F	V	V	V

⑤

p	q	$\sim p$	$\sim p \wedge q$
V	V	F	F
V	F	F	F
F	V	V	V
F	F	V	F

⑥

p	q	$p \vee q$	$\sim(p \vee q)$	$(p \vee q) \wedge \sim(p \vee q)$
V	V	V	F	F
V	F	V	F	F
F	V	V	F	F
F	F	F	V	F