

$$\checkmark \quad p \Leftrightarrow 1 \equiv p \quad \begin{array}{|l|} \hline p=1 \text{ ise } 1 \Leftrightarrow 1=1 \\ p=0 \text{ ise } 0 \Leftrightarrow 1=0 \\ \hline \end{array}$$

$$\checkmark \quad p \Leftrightarrow 0 \equiv p' \quad \begin{array}{|l|} \hline p=1 \text{ ise } 1 \Leftrightarrow 0=0 \\ p=0 \text{ ise } 0 \Leftrightarrow 0=1 \\ \hline \end{array}$$

$$\checkmark \quad p \Leftrightarrow p' \equiv 0 \quad \begin{array}{|l|} \hline p=1 \text{ ise } 1 \Leftrightarrow 0=0 \\ p=0 \text{ ise } 0 \Leftrightarrow 1=0 \\ \hline \end{array}$$

$$\checkmark \quad p \Leftrightarrow p \equiv 1 \quad \begin{array}{|l|} \hline p=1 \text{ ise } 1 \Leftrightarrow 1=1 \\ p=0 \text{ ise } 0 \Leftrightarrow 0=1 \\ \hline \end{array}$$

$$\checkmark \quad 0 \Leftrightarrow p \equiv p'$$

$$\checkmark \quad 1 \Leftrightarrow p \equiv p$$

## ÖRNEK

$[(p \Rightarrow p') \wedge (p \Leftrightarrow 0)] \Leftrightarrow p$  ifadesinin değeri nedir?

## ÇÖZÜM

$$[(p \Rightarrow p') \wedge (p \Leftrightarrow 0)] \Leftrightarrow p \equiv$$

$$[ \quad p' \quad \wedge \quad p' \quad ] \Leftrightarrow p \equiv$$

$$[ \quad p' \quad ] \Leftrightarrow p = \boxed{0} \text{ bulunur.}$$

## ÖRNEK

$[(p \vee q) \Leftrightarrow p] \Rightarrow q'$  ifadesinin en sade şekli nedir?

## ÇÖZÜM

$$[(p \vee q) \Leftrightarrow p] \Rightarrow q' \equiv$$

$$\{[(p \vee q) \Rightarrow p] \wedge [p \Rightarrow (p \vee q)]\} \Rightarrow q' \rightarrow (p \Rightarrow q) \equiv (p' \vee q)$$

$$= \{[(p \vee q)' \vee p] \wedge [p' \vee (p \vee q)]\} \Rightarrow q'$$

$$= \{[(p' \wedge q') \vee p] \wedge [p' \vee p \vee q]\} \Rightarrow q'$$

$$= \{[(p' \vee p) \wedge (q' \vee p)] \wedge [1 \vee q]\} \Rightarrow q'$$

$$= \{[1 \wedge (q' \vee p)] \wedge [1]\} \Rightarrow q'$$

$$= \{1 \wedge (q' \vee p) \wedge 1\} \Rightarrow q' = (q' \vee p) \Rightarrow q' = (q' \vee p)' \vee q'$$

$$= (q \wedge p') \vee q' = \underbrace{(q \vee q')}_1 \wedge (p' \vee q') = (p' \vee q') = \boxed{(p \wedge q)'}$$

### ÖRNEK

Aşağıdakilerden hangisi totolojidir?

- A)  $p \Leftrightarrow 0$       B)  $p \Leftrightarrow 1$       C)  $p \Leftrightarrow p'$   
D)  $p \Leftrightarrow p$       E)  $p \Rightarrow 0$

### ÖRNEK

Aşağıdakilerden hangisi çelişkidir?

- A)  $p \Rightarrow p$       B)  $0 \Rightarrow p$       C)  $1 \Rightarrow p$   
D)  $p \Rightarrow 1$       E)  $p \Leftrightarrow p'$