Show All Solutions

Rosen, Discrete Mathematics and Its Applications, 6th edition
Extra Examples

Section 1.2—Propositional Equivalences

Extra Examples — *Page references correspond to locations of Extra Examples icons in the textbook.*

---

p.22, icon below Definition 2

#1. Prove that $\neg[r \vee (q \wedge (\neg r \rightarrow \neg p))] \equiv \neg r \wedge (p \vee \neg q)$ by using a truth table.

See Solution

---

p.22, icon below Definition 2

#2. Show that $\neg(p \vee q) \not\equiv \neg p \vee \neg q$.

See Solution

---

p.26, icon at Example 6

#1. Prove that $\neg[r \vee (q \wedge (\neg r \rightarrow \neg p))] \equiv \neg r \wedge (p \vee \neg q)$ by using a series of logical equivalences.

See Solution

---

p.26, icon at Example 6

#2. Here is a newspaper headline:

"Legislature Fails to Override Governor's Veto of Bill to Cancel Sales Tax Reform."

Did the legislature vote in favor of or against sales tax reform?

See Solution

---

p.26, icon at Example 6

#3. Suppose you want to prove a theorem of the form $p \to (q \vee r)$. Prove that this is equivalent to showing that $(p \wedge \neg q) \to r$.

See Solution

---

p.26, icon at Example 6

#4. Write the statement $p \to (\neg q \wedge r)$ using only the connectives $\neg$ and $\wedge$.

See Solution
