

①

a.  $P \rightarrow B \wedge C$

b.  $P \rightarrow L'$

c.  $P' \rightarrow L$

d.  $B \wedge C \leftrightarrow P$

e.  $(B \wedge L') \vee H'$

f.  $(L' \wedge P) \rightarrow B$

② a.  $(S' \rightarrow M)' \leftrightarrow (S \vee M)' \leftrightarrow S' \wedge B'$

The carton is not sealed and the milk does not spoil.

b.  $[(S \wedge R) \rightarrow M']' \leftrightarrow (S \wedge R) \wedge M \leftrightarrow S \wedge R \wedge M$

The carton is sealed, the refrigerator is working, and the milk spoiled, anyway.

c.  $(B \rightarrow W)' \leftrightarrow B \wedge W'$

Flowers bloomed but the weather is not good.

d.  $(B \leftrightarrow W)' \leftrightarrow [(B \rightarrow W) \wedge (W \rightarrow B)]' \leftrightarrow (B \rightarrow W)' \wedge (W \rightarrow B)' \leftrightarrow (B \wedge W) \vee (W \wedge B')$

Either flowers bloom or the weather is good, but not both.