

Answer to the exercise on propositional resolution.

Show by resolution that the following set of clauses is inconsistent (derive empty clause from it):

$$\begin{aligned} & [A, B, C], [A, B, \neg C], [A, \neg B, C], [A, \neg B, \neg C], \\ & [\neg A, B, C], [\neg A, B, \neg C], [\neg A, \neg B, C], [\neg A, \neg B, \neg C] \end{aligned}$$

Answer.

1. $[A, B]$ from $[A, B, C], [A, B, \neg C]$.
2. $[A, \neg B]$ from $[A, \neg B, C], [A, \neg B, \neg C]$.
3. $[A]$ from 1,2.
4. $[\neg A, B]$ from $[\neg A, B, C], [\neg A, B, \neg C]$.
5. $[\neg A, \neg B]$ from $[\neg A, \neg B, C], [\neg A, \neg B, \neg C]$.
6. $[\neg A]$ from 4,5.
7. $[\]$ from 3,6.