

Problem Set #3

Due: 10/8 in class

This problem set is more challenging and time-consuming than the previous two – be sure to allocate enough time! Also, be sure to read the instructions for each group of problems carefully. For example, 6.24 and 6.25 require you to turn in an informal proof as well as a formal one.

Formal Proofs

- 1) Do “You Try It” on p. 145, 151-3, 153-4.
- 2) Exercises 6.5, 6.6 on p. 154
- 3) Do “You Try It” on p. 160. Note that this is a "smaller" form of the Resolution principle that we discussed in class. Here, Q and $\neg Q$ "cancel out" to leave us with P . It's worth remembering the pattern of this proof, since it will occur many times.
- 4) Exercises 6.11, 6.12, 6.14 on p. 162.
- 5) Exercise 6.20 on p. 166
- 6) Do “You Try It” on p. 168
- 7) Exercise 6.24, 6.25, 6.32 on p. 172-3
- 8) Exercise 6.33, 6.35, 6.40 on p. 175 (Taut Con allowed for Law of Excluded Middle only)

Note: the file Exercise 6.33.prf provides an incomplete proof as a starting point, and we are happy for you to complete it as suggested in the problem. However, the middle part of this proof is longer than necessary. We would prefer that you turn in a shorter version, even though the Grade Grinder may say that you didn't follow the instructions.