Unless otherwise specified, your solutions should be written in complete, grammatically correct English sentences. Don’t forget to disclose with whom you worked on the assignment. Any numbered references to results or Exercises are for the course textbook.

1. (a) Why do we require that the quadrilateral be convex in the statement of Theorem 1.1.1? (It is a little sloppy on the authors’ part not to mention this.)
   (b) Solve Exercise 1.1.2.

2. Let $C$ be the unit circle in the plane $\mathbb{R}^2$; i.e., it has unit radius and center at the origin. Consider the propositional function
   \[ I(\ell) : \text{ line } \ell \text{ is tangent to } C. \]
   Find the truth set of $I$ (and justify your answer).

3. Solve Exercises 1.4.15(a,b,c).

4. Solve Exercises 1.4.16(a,b,c).

5. Solve Exercise 1.7.1.

6. Solve Exercise 1.7.2.

7. Solve Exercise 1.7.7.