LGIC 010 & PHIL 005
Problem Set 1
Spring Term, 2019
DUE IN CLASS MONDAY, JANUARY 28

1. Brit and Kit were among 60 people who attended a philosophy meet-up. The day after the event, Witt learned that Brit and Kit were the only two people at the event who had met exactly the same number of people. When Witt heard this, she immediately surmised that there were two possible numbers of people, m and n, whom Brit and Kit might each have met, with $m < n$. She then asked whether Brit and Kit had met at the event, and when she heard the answer, she knew that they had each met m people.

   (a) (30 points) What are the values of m and n? Explain your answer.

   (b) (15 points) What was the answer to Witt's question? Explain your answer.

2. Recall that $\oplus$ represents exclusive disjunction.

   (a) (25 points) How many truth assignments to the sentence letters p, q, and r satisfy the following schema?
   $$(p \oplus q) \wedge (q \oplus r) \wedge (r \oplus p)$$

   (b) (30 points) How many truth assignments to the sentence letters $p_1, \ldots, p_5, q_1, \ldots, q_5$ satisfy the following schema?[1]

   $$(p_1 \supset q_1) \oplus (p_2 \supset q_2) \oplus (p_3 \supset q_3) \oplus (p_4 \supset q_4) \oplus (p_5 \supset q_5)$$

---

[1]You may find it useful to consult "A Combinatorial Interlude," *LGIC 010 Textbook*, p. 23, as you ponder this problem.