# Sixth Quiz for CSI35

## Nikos Apostolakis

## November 20, 2009

**Directions:** This quiz is due Tuesday November 24, at 4:00 PM.

1. Are the two graphs in Figure 1 isomorphic? How about the graphs in Figure 2? or in Figure 3? Prove your answers.
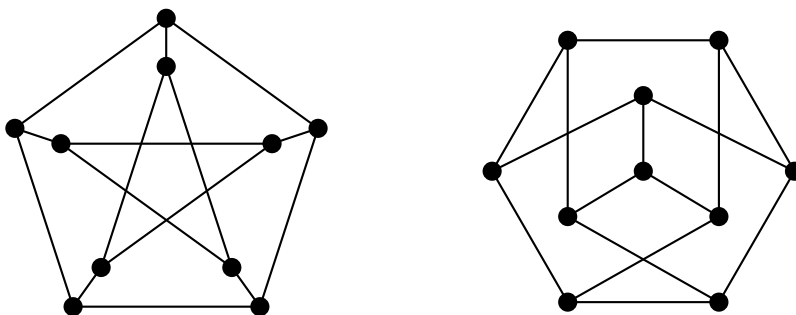


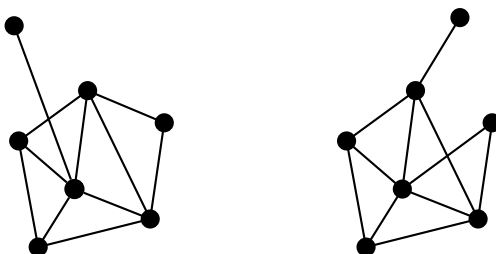Figure 1: The first two graphs of Question 1



Figure 2: The middle two graphs of Question 1

2. Count von Diamond has been murdered in his estate. The internationally known detective (and part time graph theorist) Inspector Clouseau has been called in to investigate. The butler claims that he saw the gardener enter the pool room (where the murder took
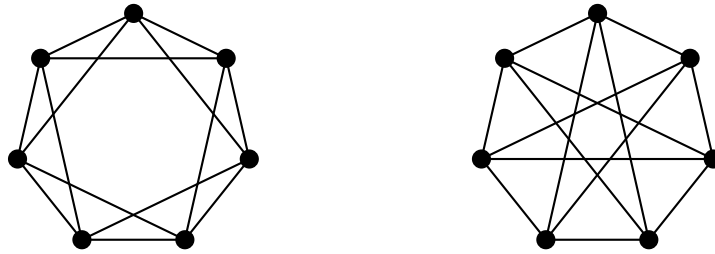
Figure 3: The last two graphs of Question 1

place) and then, shortly after, leave that room by the same door. On the other hand, the gardener says that he cannot be the man that the butler saw because he entered the house, went through each door exactly once and then left the house. Inspector Clouseau checks the floor plan (see Figure 4) and within minutes declares the case solved. Who done it?
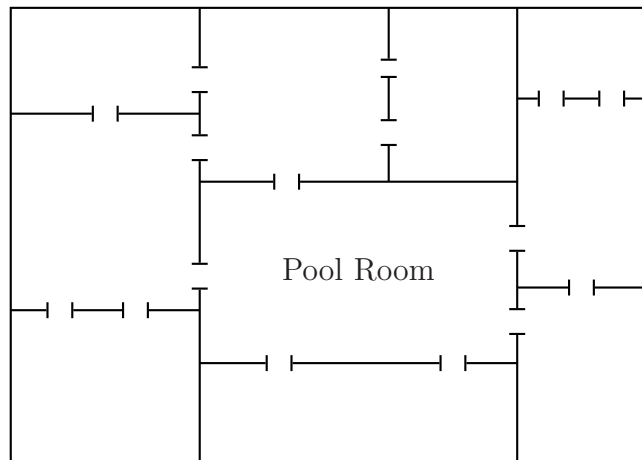


Figure 4: The floor of Von Diamond Estate

3. **Extra Credit:** Is it possible to walk the seven bridges of Königsberg so that you cross every bridge exactly twice, once in every direction?