1. Many people at a party shake their hands. Is the number of people who shook hands an odd number of times even or odd?

2. Alice and Bob are throwing a party and have invited four other couples. After the guests arrive, people greet each other by shaking hands (only once, of course). At some point during the handshaking process, Bob stands on a chair and asks each person how many hands they have shaken. To his surprise, he learns that no two people on the floor have shaken the same number of hands. How many hands has Alice shaken? What can you say about the number of handshakes Bob has given?

3. Can we trace the following diagram without lifting the pencil off the paper and without going through a segment more than once?
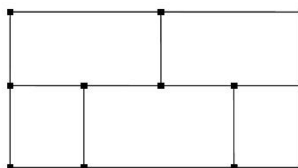
4. Bob and Alice live in distant cities in a country with a corrupt postal service. Bob wants to send Alice a birthday present, but fears that it might be stolen by postal workers. Bob is thinking of sending the gift in a small trunk that has three padlock hasps. He can secure the trunk with a padlock (or more), but then Alice won't be able to open it. He is in the same predicament with the padlock keys. How can he send the gift to his beloved?