Answer the questions in the space provided below. You may use the back of the page if you need more space. Time: 15 minutes.

Name and section: _____

1. Let $m, n \in \mathbb{N}_+$ be positive natural numbers. Answer the following questions (you do not have to provide proofs):
   (a) How many edges does K_n (the complete graph on n vertices) have? (20)
   (b) How many edges does $K_{m,n}$ (the complete bipartite graph on n and m vertices) have? (20)
2. Let G be a non-empty graph, such that every vertex in G has degree two. Let e be an arbitrary edge of G. Prove or disprove the following statement: $G - e$ is a connected graph. (60)