## MA 1971 Bridge to Higher Mathematics

Quiz 5

I affirm that I have not consulted my text, notes or any reference, paper or electronic, or any person once I opened and/or looked at this quiz.

## Signature:

Show all work needed to reach your answers.

- 1. (5 points) Please give the graph theory definition of a tree.
- 2. (5 points) Suppose that you have a friend who has taken a graph theory course and who claims to have drawn a tree with 15 vertices and 12 edges. In one sentence, please explain why is your friend mistaken.

3. (10 points) An edge in a connected graph G is a *bridge* iff its removal will disconnect the graph. Please show that if G is a cycle, then none of its edges is a bridge. Hint: Start with the definition of a cycle.

Name:

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