CS2022/MA2201
HW#8

DUE: Monday, October 13 (Canadian Thanksgiving)

1. (4 points) Do **Exercise 6.1.4** from our text.

2. (4 points) Do **Exercise 6.2.4** from our text.

3. (1 point) Do **Exercise 6.2.8** from our text.

4. (2 points) Do **Exercise 6.4.2** from our text.

5. (1 point) Do **Exercise 6.5.12** from our text.

6. (1 point) Do **Exercise 6.5.20** from our text.

7. (3 points) Do **Exercise 6.5.26** from our text. 0 is neither positive nor negative.

8. (8 points) Prove or give a counterexample to the following:
CONJECTURE: Every simple graph $G=(V,E)$ with $|V|\geq 2$ has at least two vertices of equal degree.

9. (8 points) Prove or give a counterexample to the following:
CONJECTURE: For any graph G, if δ is the minimum of the degrees of all the vertices of G, then G has a path of length at least δ.
(Hint: If you're trying to prove this theorem, consider the consequences of G having a longest path of length less than δ. Why couldn't this path be extended beyond one of its endpoints?)