

# CS320: Assignment 3

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## **Problem 1**

Stuck trying to get cyclic graphs to work.

## **Problem 2**

Since each node has a degree of at least 2, there are no leaf nodes. This means that it will be possible to find a cycle without the need to backtrack. By simply using a depth-first search and checking for run-overs we can find a cycle in  $O(|V|)$  time.

Here is the algorithm:

## **Problem 3**

## **Problem 4**