CS62: Spring 2026: Lecture #19 worksheet

1. Draw the following undirected graph represented as an adjacency list:

1: 2 5
2: 1 3 5
3: 2 4
4: 3 5 6
5: 1 2 4
6: 4

2. For the graph above, fill in the adjacency matrix below:

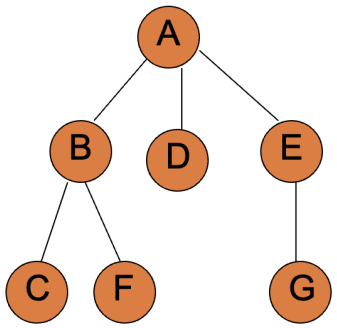
	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						

3. What is the degree of node 5?

4. Is it a tree?

5. Does it have a cycle? If so, what is the longest cycle in the graph?

```
treeSearch( toVisit )
    while !toVisit.empty()
        v = toVisit.remove()
        // visit v, e.g., print it out
        for c in v.getChildren()
            toVisit.add(c)
```



6. What order will the vertices be printed out? Assume children are traversed (i.e., returned from getChildren) left to right. Fill in the queue as you work through the algorithm:

Queue (front): A

7. What order will the vertices be printed out? Again, assume children are traversed left to right. Fill in the stack as you work through the algorithm.

```
treeSearch( toVisit )
    while !toVisit.empty()
        v = toVisit.remove()
        // visit v, e.g., print it out
        for c in v.getChildren()
            toVisit.add(c)
```

A

Stack

8. What order will the vertices be printed out?

```
search( v )
    // visit v, e.g., print it out
    for c in v.getChildren()
        search(c)
```