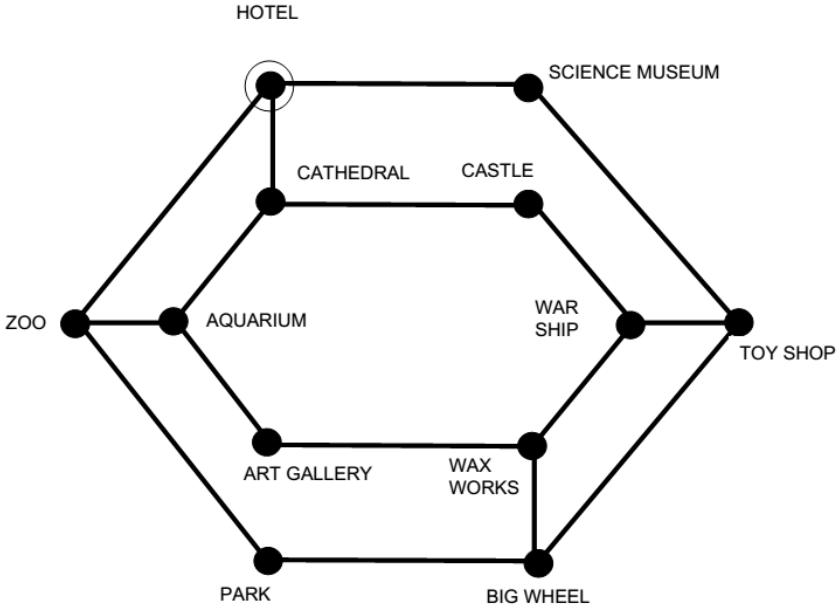
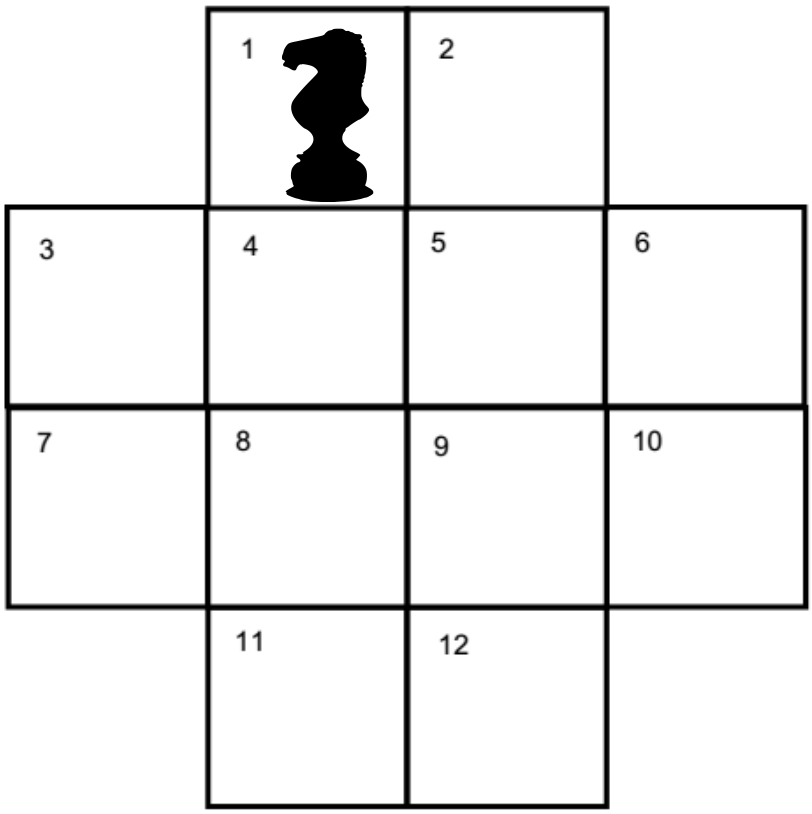
Graphs Trees etc

Exercise 1.1 – Tour guide – visit each attraction only once



Exercise 1.2 – Knights Tour –visit every square on the board once



Execrise1.3
Which of 1.1 and 1.2 is harder and why?

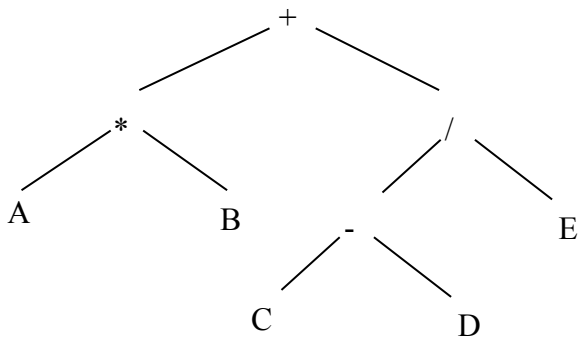
Exercise 2: A Puzzle

- Boris, Ben, Bob, Bess, Beth and Bill are waiting in a doctor's surgery. Looking around the room, each of them sees that they know some of the other people in the room. Ben knows five of the other people sitting in the room, Bob knows four of the others, Beth and Bill both know three of the others, Bess knows two of the others and Boris only knows one of the other people. Who knows who in the waiting room?
- Solve the puzzle (in pairs) by drawing a graph

Exercise 3.1: A Puzzle

- Complete the Skelton for the pre-order Tree traversal (binarytreetravesalexercise3.py)
- 3.2 and 3.3
- Extend with a post and in -order

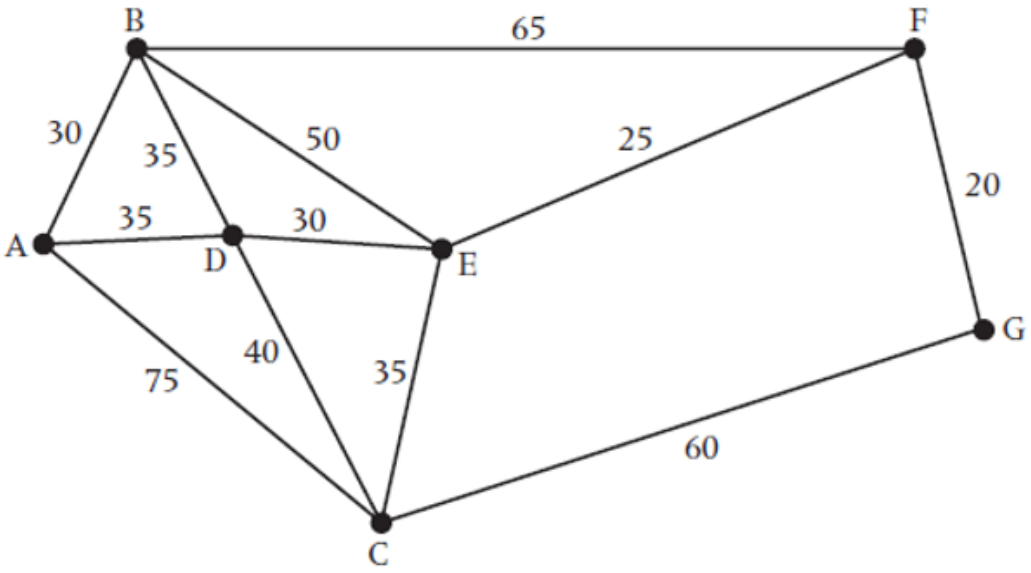
Exercise 4
An algebraic expression is represented by the following binary tree.



- Show the output produced if the tree is traversed using:
  - ❖ pre-order traversal
  - ❖ in-order traversal
  - ❖ post-order traversal

Exercise 5

The following network shows the time, in minutes, of train journeys between seven stations.



(a) Given that there is no time delay in passing through a station, use Dijkstra's algorithm to find the shortest time to travel from A to G.