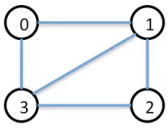
ANSWERS TO THE QUESTIONS

Backtracking and the Graph Colouring Problem

Watch the following video where you can find an explanation about the backtracking algorithm applied to a Graph Colouring Problem:



https://www.youtube.com/watch?v=miCYGGrTwFU

Stop the recording whenever you want and watch the video again to check the answers.:

1. **n**: refers to the number of nodes (cities) and **m?**: m refers to the number of colours available to colour the cities
2. Which represents the content of the adjacency matrix?
   G keeps information about the connection between two nodes, 1 if two nodes are connected, and 0 otherwise

3. Linking:

• a node to be coloured	• k
• every colour	• c
• the colour assignment for each node	• x
• a node to check if it is adjacent to other	• i
• blue colour	• 3
• green colour	• 2
• red colour	• 1
• the adjacency matrix	• G

4. True or False:
    - Zero means that two nodes are connected FALSE
    - Nodes Zero and two are not connected FALSE
    - k is the node we're trying to colour TRUE
    - return breaks the recursion TRUE
    - A node is adjacent to itself TRUE
    - isSafe function checks if the node we have passed in *k* is adjacent to the node *i* that is being checked in the loop TRUE
    - Eventually is synonym of Finally TRUE
    - Edges are the same as Arcs between nodes TRUE
    - Edges are vertices FALSE