NOTES: **CHROMATIC NUMBER**

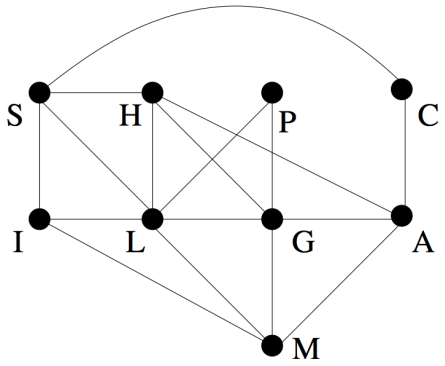
- This refers to the minimum number of colours that you would need in order to label all the vertices without making 2 adjacent (connected) points the same.
- Why would you do this?
    - Normally this would refer to a map. If they are asking you something like "How many colours would I need to colour in a map of Europe?", you need to figure out the chromatic number

Steps:

1. Choose the vertex with the highest degree and label it one colour.
2. Label points that are connecting to that vertex with other colours. HOWEVER, two points that are connecting can never have the same colour, so if your other 2 points are touching, you will need to add a new colour.
3. Repeat step 2 (while trying to keep the number of colours as low as possible) until all your points are coloured.

<u>Sample Question:</u>

Find the chromatic number of the following graph:



Answer: The chromatic number is 4.