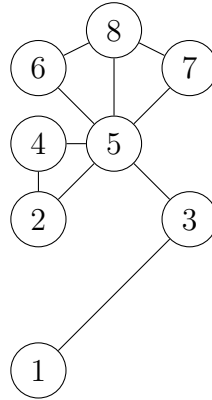


1. Find a four coloring for the graph below. Find a three coloring, or explain why no three coloring can exist. Find a two coloring, or explain why no two coloring can exist.



**Solution:** A two coloring would not be able to exist because we have a triangle in our graph.