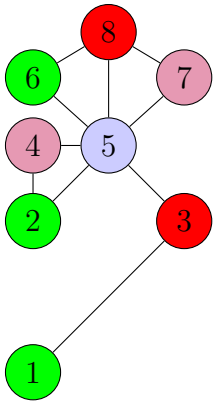
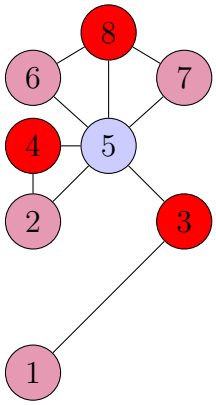
In-class Problems - Rachna Sha
22.2

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: Four coloring for graph:



   Three coloring for Graph:



   Two coloring : Is not possible as this would cause adjacent vertices to have the same color. The graph has 3 cycles - (5-7-8, 5-8-6, 5-4-2) of odd length, and cycles with odd length are 3 -colorable