In-class Activity 1: Coloring $K_5$

1. Color the edges of $K_5$ so that no adjacent edges are same color.
2. Color the edges of $K_5$ so that every pair of adjacent edges are same color.
3. Color the edges of $K_5$ so that no triangle is monochromatic (all three edges same color).
4. Color the edges of $K_5$ so that no triangle is rainbow (all three edges different color).
5. Discuss the number of colors needed/used.