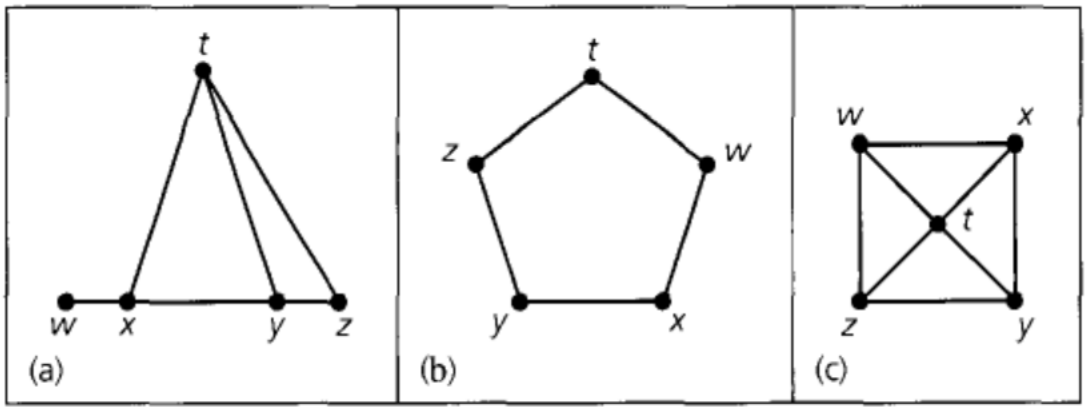
Discrete Mathematics Homework 9

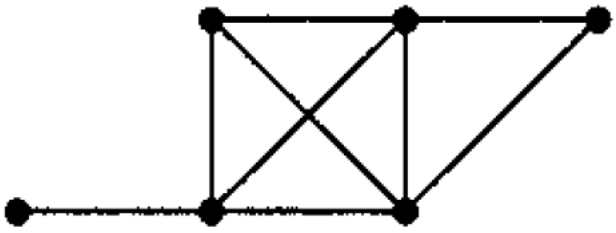
1 (a) Determine the chromatic polynomials for the graphs in below figure.

(b) Find $\chi(G)$ for each graph.

(c) If five colors are available, in how many ways can the vertices of each graph be properly colored?



2. Find the chromatic polynomial of the following graph by simplicial elimination ordering.



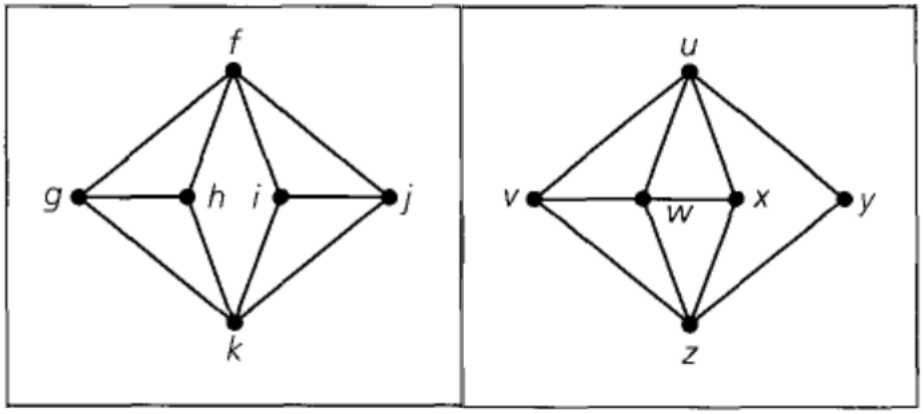
3. For $n \geq 3$, let $G_n = (V, E)$ be the undirected graph obtained from the complete graph K_n upon deletion of one edge.

Determine $P(G_n, \lambda)$ and $\chi(G_n)$.

4 (a) Determine whether the graphs in below figure are isomorphic.

(b) Find $P(G,\lambda)$ for each graph.

(c) Comment on the results found in parts (a) and (b).



5. Find the chromatic polynomial of the following graph.