

### MATH 481: HOMEWORK 9

- (1) Show that  $\overline{C_6}$  is a polyhedron and draw its dual polyhedron.
- (2) Suppose a polyhedron is composed of 120 triangles and 160 squares. How many vertices and edges does it have?
- (3) Find the chromatic number of  $L(K_{n,n})$ .  
Hint: Try an example. Do you recognize this game?
- (4) Show that  $L(K_5)$  is not 4-colorable.  
Hint: Modify the game from (3).
- (5) Prove that the chromatic polynomial of  $C_n$  is  $(x-1)^n + (-1)^n(x-1)$ .