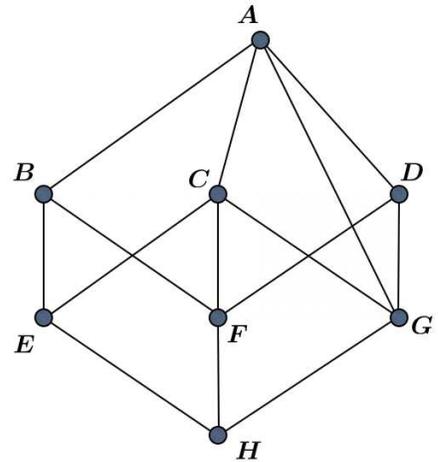


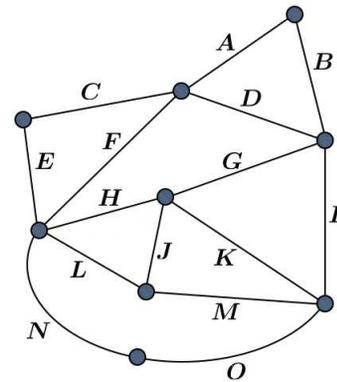
## MATH 574, EXTRA GRAPH PROBLEMS

(1) Given the graph  $G$  below, answer the following questions.

- (i) What is the degree of the vertex labeled  $C$ ?
- (ii) What is the distance from vertex  $D$  to vertex  $E$ ?
- (iii) Is the graph  $G$  complete? Explain your answer.
- (iv) Does the graph have an Euler path? Explain your answer.



(2) The graph below has an Euler path. The edges are labelled by the 15 letters  $A, B, C, \dots, N$ , and  $O$ . Write a list of letters that produces an Euler path (for example,  $ABIKJ \dots$  would indicate a path that goes through the edges  $A, B, I, K, J, \dots$  in that order).



(3) One of the two graphs below is planar and the other is not. Decide whether each is planar or not planar and give justifications for your answers.

