MAU22C00: TUTORIAL 12 PROBLEMS
GRAPH THEORY

1) Let (V, E) be the graph with vertices a, b, c, d, e, and f and edges ab, ac, bc, bd, cd, de, df, and ef.

(a) Draw this graph.
(b) Is this graph connected? Justify your answer.
(c) What is the minimum number of edges you would have to remove for the resulting subgraph to have two connected components? Justify your answer.
(d) What about three connected components? Justify your answer.
(e) What about four connected components? Justify your answer.
(f) What about five connected components? Justify your answer.
(g) Give an example of a shortest possible circuit in the graph. Justify your answer.
(h) Give an example of a longest possible circuit in the graph. Justify your answer.