

2. a) When solving linear programming problems a number of problem cases can arise. Explain, with the aid of diagrams where appropriate, how you would identify each of the following cases when solving a two-variable problem using the graphical method and when using the two-phase Simplex method.
- i) A non-unique solution.
 - ii) An infeasible problem.
 - iii) An unbounded problem.
 - iv) A degenerate solution.
 - v) Describe the usual consequence of degeneracy and explain briefly how degeneracy can be avoided.
- b) Explain how the two-phase Revised Simplex method indicates that a linear programming problem is (i) infeasible, (ii) unbounded and (iii) has infinitely many solutions.