Personalised Learning Checklist

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MEI A Level Maths/Further Maths **Module D2** **1. Linear Programming**			
Be able to solve simple maximisation problems with ≤ constraints and with two or more variables.			
Be able to identify tableaux with feasible points, particularly in the case of problems involving two or three variables.			
Be able to apply the big M method to construct an initial feasible solution to problems involving ≥ constraints.			
Be able to apply the two stage simplex to construct an initial feasible solution to problems involving ≥ constraints.			
Understand how to model an equality constraint by using a pair of inequality constraints.			
Be able to formulate, solve and interpret the solutions of a variety of problems as linear programming problems.			
2. Networks			
Know and be able to apply Dijkstra's algorithm repeatedly.			
Know and be able to apply Floyd's algorithm.			
Be able to analyse the complexity of Dijkstra's and Floyd's algorithms.			
Be able to convert the practical problem into the classical Travelling Salesperson Problem.			
Be able to interpret a classical (TSP) solution in terms of a solution to an underlying practical problem.			
Be able to analyse the complexity of complete enumeration.			
Be able to construct an upper bound for the solution to the classical (TSP) problem.			
Be able to construct a lower bound for the solution to the classical (TSP) problem.			
Know and be able to apply the route inspection algorithm.			

Be able to analyse the complexity of the route inspection algorithm.			
3. Decision Analysis			
Be able to construct and interpret simple decision trees.			
Be able to use expected monetary values (EMVs) to compare alternatives.			
Be able to use utility to compare alternatives.			
4. Logic			
Know and understand how to form compound propositions by using ~, ^, v, and			
Be able to use truth tables to analyse propositions.			
Be able to model compound propositions with simple switching and combinatorial circuits.			
Be able to manipulate Boolean expressions involving ~, ^, v, using the distributive laws, de Morgan's law, etc.			