Linear Programming Quiz 12/1/2000

Consider a company that carves wooden soldiers. The company specializes in two main types: Confederate soldiers and Union solders. The profit for each is $28 and $30, respectively. A confederate soldier requires two units of lumber, 4hr of carpentry and 2hr of finishing to complete. A Union soldier requires 3 units of lumber, 3.5 hr of carpentry and 3 hr of finishing to complete. Each week the company has 100 units of lumber delivered, and there are 120 hr of carpentry time and 90 hr of finishing time available. Determine the number of each type of wooden soldier to produce to maximize weekly profits. Using the geometric approach, clearly show the feasible set and the optimal solution.