(Kellwood) Kellwood, a company that produces a single product, has three plants and four customers. The three plants will produce 6000, 4000, and 5000 units, respectively, during the next time period. Kellwood has made a commitment to sell 3000 units to customer 1, 5000 units to customer 2, and at least 2000 units to customer 3. Both customers 3 and 4 also want to buy as many of the remaining units as possible. The profit associated with shipping a unit from each plant to each customer is given in the file **P05\_80.xlsx**. Determine how to maximize Kellwood’s profit





**Discussion: -**

Our objective is to increase profit for Kellwood. We must plan the distribution system between plants and customers. Total profit is sum-product of the unit profit and number of units distributed from a plant to customer. So, we can go for Number of units distributed from each plant to each customer as our decision variable.

**Mathematical Model: -**

*Parameters (Inputs):*

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*Decision Variables:*

*Objective:*

*Constraints:*

Our model will not go for any negative decision values as it is maximization problem, so no need to define non-negative constraint in the model.

*Excel Implementation:* Please find the attached spreadsheet for solution.

