**TRANSPORTATION ASSIGNMENT**

The Marion Fruit Company has orange groves at three different sites throughout central Florida. It also has four plants for turning fruit into orange juice concentrate. The fruit must be picked and transported from the groves to the concentrate plant. The transportation costs depend directly upon the distances from the grove to the plant. The supply of oranges (in tons) at each grove and the capacity of each plant (also in tons) are shown along with the distances from each grove to each plant in the table below. Model this transportation problem as an IP model to find the minimum distance allocation of orange supply to concentrate plants. (10 points)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Distance (miles) to Plant at | | | | | |
| Grove | Ocala | Orlando | Leesburg | Crystal River | Supply |
| Lynne | 20 | 10 | 50 | 30 | 1000 |
| Eustis | 70 | 40 | 10 | 80 | 1500 |
| Clermont | 30 | 20 | 80 | 50 | 1250 |
| Demand | 750 | 1100 | 1700 | 500 |  |