



MATHEMATICS

CH-12- LPP

Name: _____

Date: _____

Class: XII Sec: ____

1. A manufacturer produces nuts and bolts. It takes 1 hour of work on machine A and 3 hours on machine B to produce a package of nuts. It takes 3 hours on machine A and 1 hour on machine B to produce a package of bolts. He earns a profit of Rs. 17.50 per package on nuts and Rs. 7 per package on bolts. How many packages of each should be produced each day so as to maximize his profit if he operates his machine for at most 12 hours a day. Form an LPP and solve graphically.
2. A merchant plans to sell two types of computers- a desktop and a laptop that will cost Rs. 25000 and Rs. 40000 respectively. He estimates that the total monthly demand of computers will not exceed 250 units. Determine the number of units of each type of computers which the merchant should stock to get maximum profit if he does not want to invest more than Rs 70 lakhs and if his profit on desktop model is Rs 4500 and on laptop is Rs 5000.
3. A diet for a sick person must contain at least 4000 units of vitamins, 50 units of minerals and 1400 units of calories. Two foods X and Y are available at a cost of Rs 4 and Rs 3 per unit respectively. One unit of food X contains 200 units of vitamins, 1 unit of minerals and 40 units of calories, whereas one unit of food Y contains 100 units of vitamins, 2 units of minerals and 40 units of calories. Find what combination of X and Y should be used to have least cost, satisfying the requirements.
4. A manufacturing company makes two types of teaching aids A and B. Each type of A requires 9 labour hours for fabricating and 1 labour hour for finishing. Each type of B requires 12 hours of fabricating and 3 hours of finishing. For fabricating and finishing the maximum labour hours available are 180 and 30 respectively. The company makes a profit of Rs 80 on type A and Rs 120 on type B. How many pieces of type A and B should be produced to get maximum profit.