A manufacturing system with two products P and Q. Weekly demand for P is 120 units & for Q is 60 units. Price of products P and Q are $90 and $135, respectively. There are four work-centers (Resources): A, B, C, and D. Time available at each work center is 2,400 minutes per week. The required times for each product is given below. Operating expenses per week is $7,000. All the resources cost the same.

a) Can we satisfy the demand?

1. yes
2. no, resource A is the bottleneck
3. no, resource B is the bottleneck
4. no both resources A and B are bottleneck
5. no, all resources are bottleneck



1. Find the optimal solution for this problem.

Profit Margin P = 90-20-20-5 = 45

Profit Margin Q = 135-20-25 = 90

45/10 =4.5

90/30 =3

Produce as much P as you can

120(10) = 1200

2400-1200=1200

1200/30 = 40

1. 110 P and 50 Q
2. 110 P and 60 Q
3. 100 P and 50 Q
4. 100 P and 60 Q
5. None of the above

c) Suppose we can increase the market of product P by 3 unit. How much will it increase the profit?

1. $180
2. $135
3. $45
4. $270
5. no change