For example 100 boxes were sent from Factory A to warehouse W2 and no boxes from factory A to warehouses W1 and W3. The shipping pattern shown above completely supplied all the warehouses and made use of all the capacity available at the factories.

Using the shipping pattern shown above as your initial solution, apply the transportation problem solution procedure to calculate the minimum cost shipping pattern. Comment on the solution you obtain.

If the transportation cost involved in shipping one box from factory A to warehouse W3 fell from the £8 shown above to £5 what now would be the minimum cost shipping pattern?

8. The demand for a product from the customers associated with a warehouse W1 in each of the last five weeks is shown below.

Week	1	2	3	4	5
Demand	100	159	185	201	226

Apply a two week moving average to generate a forecast for the demand for this product in week 6.

Apply exponential smoothing with a smoothing constant of 0.9 to generate a forecast for the demand for this product in week 6.

Which of these forecasts for demand in week 6 do you prefer and why?

The transportation cost per unit in shipping this product from a factory (A or B) to a warehouse (W1 or W2) is shown below.

		To W1	W2
From	A	30	73
	B	34	12

For example sending one unit from factory A to warehouse W2 costs £73. In the forthcoming month it is estimated that production capacity at A and B is 900 and 750 units respectively. Demand at W2 in week 6 is estimated to be 400 units.

For a variety of logistical reasons the amount shipped from factory A to warehouse W2 must be within 7 units of the amount shipped from factory B to warehouse W2. Unused capacity at factory A is costed at £10.50 per unit per month and unused capacity at factory B is costed at £11.75 per unit per month.

Formulate the problem of shipping the products at minimum total cost as a linear program.