Planning

You are the owner of the company named 'OptimumNutrition'. You are planning for producing 3 products MassGainer, WheyProtein, and ChocolateMassGainer. There are only 22 productive days in a month after excluding Sundays and holidays. You are given the following information:

- Maximum demand for each product (in 1 Kg units).
- Selling price of each product (in $/1 Kg).
- Cost you will incur in producing 1 Kg of product.
- You can only produce a maximum fixed amount of 1 Kg units of a product in a day.
- Initial one time cost for setting up the production line for each product.
- The minimum amount of production to be done for each product, if you set up producion line for that product.

Products	MassGainer	WheyProtein	ChocolateMassGainer
demand	5400	4600	5300
sellingprice	124	109	114
productioncost	73.40	53.90	66.40
quota	550	470	550
initialcost	180000	160000	110000
minimumquantity	21	21	17

Find the maximum income which we can get by deciding on both factors: whether to set up production for a product and if so, what quantity of that product should we produce?

- Part **A**) Write the variables, parameters (given data), optimization objective and constraints in a mathematical form explicitly in the sheet.
- Part **B**) Use any modelling language to solve the above problem for given Planning.dat file.