Assignment

A Factory makes two products (ProdA and ProdB). Demand of the total quantity of ProdA and ProdB is equal to or more than 10 ton in a day. In other words, the lower limit of the total quantity of these products is 10 ton in a day. To make 1ton ProdA, it is necessary to use 100kg Material1 and 400kg Material2. To make 1ton ProdB, it is necessary to use 200kg Material1 and 200kg Material2. The upper limit material quantity that is able to be used in a day is 1.6 ton for Material1 and 3.2ton for Material2. The profit by making each product is 300,000¥/ton for ProdA and 100,000¥/ton for ProdB.

	ProdA	ProdB	Constraints
Production Quantity(ton)	X1	X2	The total quantity(X1 + X2) must be equal to or more than 10 ton.
Material1 Quantity(kg)	100	200	The upper limit of the total quantity for Material1 is 1.6 ton.
Material2 Quantity(kg)	400	200	The upper limit of the total quantity for Material2 is 3.2 ton.
Profit(¥/ton)	300,000	100,000	

- Write Standard form.
- Explain the solving sequence showing Simplex table transformation
- To get maximum profit, how much should each product be produced?
- How much is the total profit?
- If we can purchase Material2 at 2,000 ¥/kg, answer whether we should consider obtaining this material and changing the quantity of product or not. Also explain the reason.

Style: A4 1 sheet, in Japanese / English

deadline : before the next lecture