

The manager of an oil-refinery must decide on the optimal mix of 2 possible Blending processes, of which the input and output per production run are given as follows:

Process	Input (units)		Output (units)	
	Crude 'A'	Crude 'B'	Gasoline X	Gasoline Y
I	5	3	5	8
II	4	5	4	4

The maximum amount available of crude A and B are 200 units and 150 units respectively. Market requirements show that at least 100 units of gasoline X and 80 units of gasoline Y must be produced. The profit per production run from process I and process II are ` 300 and ` 400 respectively. Formulate the above problem as LPP and solve.

A small petroleum company owns two refineries. Refinery 1 costs \$20,000 per day to operate, and it can produce 400 barrels of high-grade oil, 300 barrels of medium- grade oil, and 200 barrels of low-grade oil each day. Refinery 2 is newer and more modern. It costs \$25,000 per day to operate, and it can produce 300 barrels of high- grade oil, 400 barrels of medium-grade oil, and 500 barrels of low-grade oil each day. The company has orders totalling 25,000 barrels of high-grade oil, 27,000 barrels of medium-grade oil, and 30,000 barrels of low-grade oil. How many days should it run each refinery to minimize its costs and still refine enough oil to meet its orders?