Reddy Mikks Corporation produces both interior and exterior paints from two raw materials, M1 and M2. The following table provide the basic data of the problem:

	Tons of raw material per ton of		Maximum daily availability (tons)
	Exterior Paint	Interior Paint	
Raw Material M1	6	4	24
Raw Material M2	1	2	6
Profit per ton ($1000)	5	4	

The daily demand for interior paint cannot exceed that for exterior paint by more than 1 ton. Also, the maximum daily demand for interior pain is 2 tons.

Develop an LP model for this problem, and then set it up and solve it, both graphically and in Excel or QM for Windows.

Shale Oil, located on the island of Aruba, has a capacity of 1,500,000 bbl (barrels) of crude oil per day. The final products from the refinery include three types of unleaded gasoline with different octane numbers (ON): regular with ON = 87, premium with ON = 89, and super with ON = 92. The refining process encompasses three stages: 1) a distillation tower that produces feedstock (ON=82) at the rate of 0.2 bbl per bbl of crude oil, 2) a cracker unit that produces gasoline stock (ON = 98) by using a portion of the feedstock produced from the distillation tower at the rate of 0.5 bbl per bbl of feedstock, and 3) a blender unit that blends the gasoline stock from the cracker unit and the feedstock from the distillation tower. The company estimates the net profit per barrel of the three types of gasoline to be $6.70, $7.20, and $8.10, respectively. The input capacity of the cracker unit is 200,000 bbl of feedstock a day. The demand limits for regular, premium, and super gasoline are 50,000, 30,000, and 40,000 bbl, respectively, per day. As a guide, the octane number of a gasoline product is the weighted average of the octane numbers of the input streams used in the blending process.

Develop a model for determining the optimum production schedule for the refinery and solve it using Excel or QM for Windows.