ASSIGNMENT

A cargo plane has three compartments for storing cargo: front, centre and rear. These compartments have the following limits on both weight and space: Compartment Weight capacity Furthermore, the weight of the cargo in the respective compartments must be the same proportion of that compartment weight capacity to maintain the balance of the plane. The following four cargoes are available for shipment on the next flight: Any proportion of these cargoes can be accepted. The objective is to determine how much (if any) of each cargo C1, C2, C3 and C4 should be accepted and how to distribute each among the compartments so that the total profit for the flight is maximized.

I. Formulate the above problem as a linear program
II. What assumptions are made in formulating this problem as a linear program?