ITEC451
Activity 4
(As a group of three)

[Linear Programming] Extremely-Fast corp. is an internet service provider which must determine how many OC-768 communication cables need to be leased to VIP clients and VVIP clients, respectively. (The OC-768 is a fiber optic network cable with transmission speeds of up to 39,813.12 Mbits/s.) One OC-768 can provide a network service to 25 VIP clients and requires 10 hours of maintenance and customer services per week. One OC-768 cable can support 10 VVIP clients and requires 4 hours of maintenance and customer services. All VIP type channels can be leased at $200 per week, and all VVIP type channel can be leased at $300 per week. Seven OC-768 cables and 40 hours per week of labor for maintenance and customer services are available. The company regulations require that at least 30 VVIP clients be supported during any weeks. Let x_1 = number of the cables with VVIP clients, and x_2 = number of cables with VIP clients. Using these decision variables, formulate LP whose solution will tell Extremely-Fast corp. how to maximize the total profit from VIP and VVIP clients.
(Based on Problem 1 in Page 55 of the textbook)