HW1: Due 21 September at 6pm

Please submit by LumiNUS and include your name and student ID on the cover page.

1) Movie tickets are sold to three different customer segments: adults, students, and seniors. Suppose that the demand for adults is given by $P_a = 56 - 4Q_a$, demand for students is given by $P_s = 32 - 4Q_s$, and demand for seniors is given by $P_{sn} = 16 - 4Q_{sn}$. P_i is the price for the i customer segment, Q_i is the quantity demanded by the i customer segment, and $i = a, s, sn$, where a stands for adults, s stands for students, and sn stands for seniors. Further, assume that the total cost of the movie theater is $C(Q) = 100 + 12Q$, where $Q = Q_a + Q_s + Q_{sn}$.

a) What is the price and quantity sold assuming no price discrimination?

b) What is the price and quantity sold assuming third degree price discrimination?