

Answer to Question #91082, Economics / Microeconomics

Demand: $P = 20 - 0.1Q$

$TC = 120 + 2Q + 0.05Q^2$

a) $R = PQ = 20Q - 0.1Q^2$

$MR = 20 - 0.2Q$

$MC = 2 + 0.1Q$

At Q_m and P_m , $MR = MC$

$Q_m = 60, P_m = 20 - 0.1(60) = \14

b) $ATC = \frac{120}{Q} + 2 + 0.05Q$

$Profit = TR - TC$

$TR = P_m * Q_m = \$840$

$TC = (ATC \text{ at } Q_m)Q_m = \420

$Profit = \$420$

c) P with $Q = 20$

$CS = 0.5(20 - 14)(60) = \180

d) $DWL = 0.5 * (P_2 - P_1) * (Q_1 - Q_2)$

At DWL $P = MC$

$20 - 0.1Q = 2 + 0.1Q$

$Q = 90, P = 11$

$DWL = 0.5(14 - 11)(90 - 60) = \45

Answer provided by <https://www.AssignmentExpert.com>