

EE 320 Introductory Mathematical Economics

Semester 2/2012

Suggested Answers – Homework 1

1. Market demand is: $Q_{mkt}^D = 9 - 4P^2$ if $P \leq \sqrt{5/3}$, $Q_{mkt}^D = 4 - P^2$ if $P > \sqrt{5/3}$
Market supply is: $Q_{mkt}^S = 7 + 7P$,
and $(P^*, Q^*) = (0.25, 8.75)$
2.
 - a. The three goods are substitutes.
 - b. $(P_1^*, Q_1^*) = (4, 16)$, $(P_2^*, Q_2^*) = (7, 10)$, and $(P_3^*, Q_3^*) = (6, 13)$
3.
 - a. $P^{\text{consumer}} = (1+t)P^* = 10.3125$, $P^{\text{producer}} = P^* = 6.875$
 - b. $P^{\text{consumer}} = P^* = 11$, $P^{\text{producer}} = (1-t)P^* = 5.5$
4.
 - a. $Y^* = \frac{C_0 - bT + I_0 + G_0 + X_0 - M_0}{1 - b + m}$
 - b. $\frac{\Delta Y^*}{\Delta G} = \frac{1}{1 - b + m}$
 - c. $Y^* = 460$
 - d. $\Delta Y^* = -24$
5.
 - a. IS: $Y = 6250 - 5000r$, LM: $Y = 2500 + 7500r$
 - b. $(Y^*, r^*) = (4750, 0.3)$