

Unit 1

Ch. 15 Homework Key

#18. \$4/day = \$1460/yr.

$$PV \text{ of } \$1460 \text{ perpetuity} = \frac{1460}{r} = \frac{1460}{.03} = \$48,667$$

#27

$$\begin{aligned} PV &= 100 + 100(PVIF_{.05,1}) + 100(PVIF_{.05,2}) \\ &= 100 + 100(.9524) + 100(.9070) \\ &= 100 + 95.24 + 90.70 = 285.94 \end{aligned}$$

#28 $X(.10) = 200$

$$\Rightarrow X = \frac{200}{.10} = 2000$$

#30 Rent if $PV \text{ of } \$10/\text{yr} < \100 (= buy cost)

$$\Rightarrow 10(PVIFA_{.10,n}) < \$100$$

$$\Rightarrow \text{if } PVIFA_{.10,n} < 10, \text{ Rent}$$

Note all $PVIFA_{.10,n} < 10$ in table \Rightarrow Rent

#32 True cost = initial cost - PV of resale value

$$\begin{aligned} &= 200 - 100(PVIF_{.05,2}) \\ &= 200 - 100(.9070) = 200 - 90.70 = \$109.30 \end{aligned}$$

#34 Solution in text

Unit 2

Ch 3 Homework Key

#3 Solution in text

#5 Solution in text

#11 Boston: $U \max \Rightarrow \frac{MU_A}{MU_T} = MRS = \frac{P_A}{P_T} = 2$

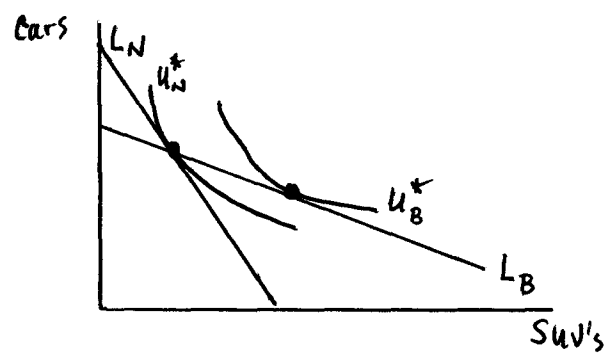
San Diego: $U \max \Rightarrow \frac{MU_A}{MU_T} = MRS = \frac{P_A}{P_T} = \frac{1}{2}$

\Rightarrow MRS is higher in Boston

#12 Budget line slopes = $\frac{P_{SUV}}{P_{car}}$

If indifference curves are 'normal', need more info to determine optimal Q's of SUV's and cars for each.

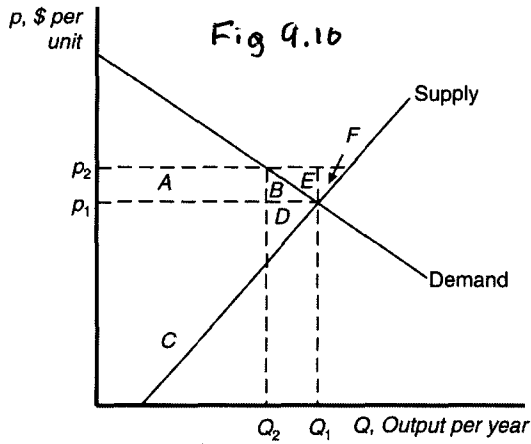
Nigel will buy more cars



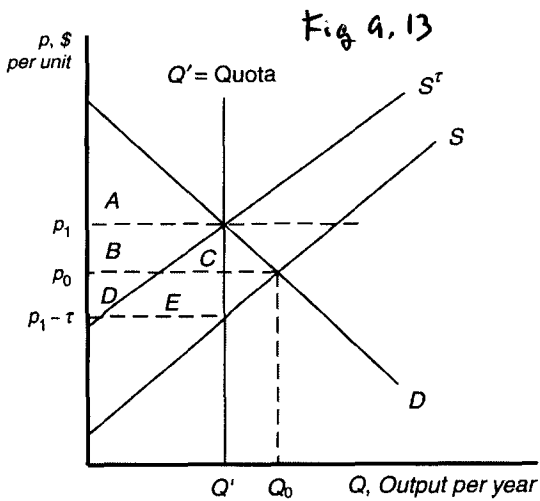
#24 $MRS = \frac{3g_2}{g_1} = \frac{MU_1}{MU_2} = \frac{P_1}{P_2} = \frac{1}{2} \Rightarrow g_1 = 6g_2$

Sub into budget eqn $\Rightarrow 100 = 2g_2 + 1g_1$
 $\Rightarrow 100 = 2g_2 + 1(6g_2)$
 $\Rightarrow 100 = 8g_2 \Rightarrow g_2 = 12.5, g_1 = 75$

- # 9. See Figure 9.10. With the price increase, producers gain A , but lose D . The payment x must be enough to compensate producers for their net loss from the price increase ($x = D - A$). With this payment, producer welfare is unchanged, but consumer welfare falls by $A + B$. With a price support program, consumer surplus would be the same as with the lump sum payment program, but producer surplus would be $A + B + C + D + E + F$. A quota set at Q_1 producer surplus is $A + B + C + D + E$. With the quota set at Q_2 producer surplus is $A + C$.



- # 12. See Figure 9.13. The government prefers the tariff. In either case, consumer surplus is reduced to area A . With the quota, the government collects no revenue. With the tariff, the government collects $B + C + D + E$ as revenue.



#30 Solution in text

#34 Solution in text