

ECON 310: Answer Key
Assignment #1

1. Chapter 1, Problem Set #s 10, 11, 13b,c NOTE: IN 7TH EDITION, THESE PROBLEMS ARE 11,12&14B,C

10. $P = \$2.00$, $Q = 14$

11.

Demand			Supply		
Price	Price (tax)	Quantity	Price	Price (tax)	Quantity
.50	-----	20	.50	2.00	6
1.00	-----	18	1.00	2.50	8
1.50	0	16	1.50	3.00	10
2.00	.50	14	2.00	3.50	14
2.50	1.00	12	2.50	4.00	18
3.00	1.50	10	3.00	4.50	20

Note, the prices for quantity 20 and 18 on the demand side are negative, so I simply scratch them out since we can't have a negative price!

A) *New market price = \$1.50
Demanders actually pay $\$1.50 + \$1.50 = \$3.00$
New quantity = 10 cups*

B) *New market price = \$3.00
Suppliers actually receive $\$3.00 - \$1.50 = \$1.50$
New Quantity = 10 cups*

C) *Demanders- even though they bear the legal incidence of a sales tax, under both scenarios, demanders must pay \$3.00, so the economic incidence is the same. So they are indifferent.
Suppliers – even though they bear the legal incidence of an excise tax, under both scenarios, suppliers receive \$1.50, so the economic incidence is the same. Thus, suppliers are also indifferent under the two scenarios.*

13.

B) Demand increases, price rises and quantity rises

C) Demand falls, price fall and quantity falls...if we also considered the fact that there would be fewer workers, both demand and supply would fall. In this case, quantity would go down, but the price change would be ambiguous and depend on the relative size of the shifts.

2. Suppose the demand curve for a good is given by the equation $Q = -12P + 2400$ and the supply curve is given by $Q = 8P - 400$.

i. Find the equilibrium price and quantity

$$-12P + 2400 = 8P - 400$$

$$-20P = -2800$$

$$P = 140$$

$$Q = -12 * 140 + 2400 = 720$$

- ii. Suppose the government imposes a \$50 per unit excise tax. The tax's legal incidence is paid by _____suppliers_____.
- iii. Find the new market price and equilibrium quantity.

$$\text{Demand: } Q = -12P + 2400$$

$$\text{Supply: } Q = 8(P-50)-400$$

Now, set these equal and calculate new P and Q.

$$-12P + 2400 = 8P - 400 - 400$$

$$3200 = 20P$$

$$P=160$$

$$Q= 480$$

- iv. What is the price actually paid by demanders? What is the price actually received by suppliers?

Demanders pay \$160

Suppliers receive \$160 - \$50 = \$110

- v. What percent of the tax is paid by demanders? Suppliers?

Demanders pay \$20 out of the \$50 tax, so they pay 2/5, or 40% of the tax

Suppliers pay \$30 out of the \$50 tax, so they pay 3/5, or 60% of the tax

- vi. If the demand curve were steeper, demanders would pay a larger percent of the tax.

- vii. Suppose this tax is a sales tax. Who pays the legal incidence of this tax?

Demanders

- viii. Under the sales tax, what is the new market price and equilibrium quantity? What price do demanders pay? What price do suppliers receive?

Re-write demand equation as follows:

$$\text{Demand: } Q = -12(P+50) + 2400$$

Now, set demand equal to supply and solve for new Q and P.

$$-12P - 600 + 2400 = 8P - 400$$

$$2200 = 20P$$

$$P=110$$

$$Q= 480$$

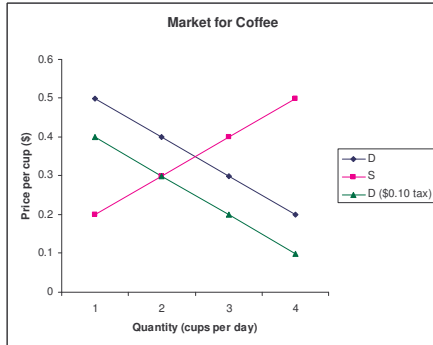
Demanders pay \$110 + \$50 = \$160

Suppliers receive \$110

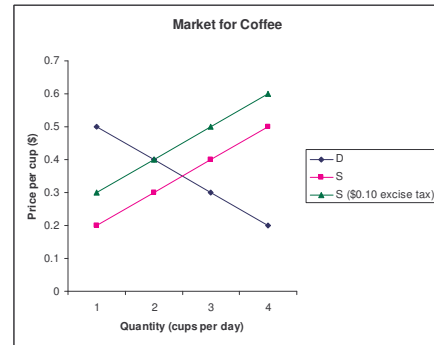
- ix. Illustrate the two scenarios graphically. Note- you do not need to draw to scale. Just illustrate the effect of an excise tax and a sales tax in general.

Note, these graphs are NOT drawn up to scale for the problem. They are illustrating the effect of the two types of taxes from the coffee example we did in class.

(A) Sales tax



(B) Excise Tax



x. If you are supplier, under which scenario would you prefer to be taxed? Why?

Since in both cases, you get \$110, you would be indifferent between a sales tax and an excise. Even though as a supplier you pay the legal incidence of an excise tax, the economic incidence of the tax is the same in both cases.

3. Chapter 2, Numerical Exercise N1

A)

	Rewiring	Paneling
Electrician	1/2 panelings	2 rewirings
Carpenter	2/3 panelings	3/2 rewirings

B)

Rewiring: electrician ($1/2 < 2/3$)

Paneling: carpenter ($3/2 < 2$)

C) If no trade, electrician spends $5 + 10 = 15$ hours

Carpenter spends $10 + 15 = 25$ hours

If more efficient does all of job,

Electrician spends $5 + 5 = 10$ hours

Carpenter spends $15 + 15 = 30$ hours

Thus, the trade benefits the electrician but does not benefit the carpenter

D) If the carpenter does 3/5 of the electrician's paneling job, he now spends $15 + (3/5)*15 = 24$ hours. The electrician then does 2 full rewiring jobs plus 2/5 of his paneling job and he spends $5 + 5 + (2/5)*10 = 14$ hours. So, under this scenario they both benefit from the trade.

4. Chapter 2, Problem Set #1

	2002	2003
Tea	$12/16000$ civics = $7.5 \cdot 10^{-4}$	$15/24000$ civics = $6.25 \cdot 10^{-4}$
Civic	$16000/12$ tea = 1333.33 tea	$24000/15$ tea = 1600 tea

Thus, the relative price of tea in terms of civics fell. The relative price of civics in terms of tea rose.

5. Multiple Choice

- i. If the demand of oil rises and all other relevant factors remain unchanged, then
- A. the supply for oil will fall
 - B. the quantity supplied of oil will fall
 - C. the supply for oil will rise
 - D. the quantity supplied of oil will rise**
- ii. The term demand refers to
- a. a collection of numbers, listing the quantities demanded at a variety of hypothetical prices.**
 - b. the information on tastes, incomes, and prices needed to determine people's desired purchases of a commodity.
 - c. the amount of a commodity that is being purchased under current market conditions.
 - d. the quantity purchased at each and every possible level of income.
- iii. The price of silver increases from \$10 per ounce to \$15 per ounce while the price of gold increases from \$300 per ounce to \$500. In this situation, the price of silver relative to the price of gold has
- A. fallen.**
 - B. risen.
 - C. remained the same.
 - D. cannot be determined given the information provided.
- iv. Suppose there are only two goods: milk and honey. If the relative price of milk falls, then the relative price of honey
- a. must also fall.
 - b. must rise.**
 - c. is unaffected.
 - d. could rise, fall, or remain unchanged.
- v. If inflation causes the absolute prices of all commodities to double, then the relative prices
- a. will also double.
 - b. will be halved.
 - c. will be unchanged.**
 - d. may rise, fall, or remain unchanged.
- vi. Suppose there are only two goods: food and clothing. What does it mean for the U.S. to have a comparative advantage in food production?
- a. The U.S. needs fewer resources to grow a given amount of food than do other nations.
 - b. The U.S. sacrifices less clothing production to grow a given amount of food than do other nations.**
 - c. In the U.S., food production needs fewer resources than does a comparable amount of clothing production.
 - d. In the U.S., food production costs less than does clothing production.
- vii. Comparing a market basket A to other market baskets, we can say that for a typical consumer, A is preferred to baskets to the
- A. southwest but less preferred to baskets to the northeast**
 - B. northeast but less preferred to baskets to the southwest
 - C. northwest but less preferred to baskets to the southeast
 - D. southeast but less preferred to baskets to the north

- viii. An indifference curve shows the baskets of goods which
- have the same marginal values.
 - the consumer can purchase, given his income and the prices he faces.
 - are the most preferred of the baskets within his budget.
 - are all equally desirable, providing the consumer with some fixed level of satisfaction.***
- ix. Under standard assumptions, which of the following is *not* a property of indifference curves?
- They are downward sloping and convex.
 - They fill the plane and never cross.
 - Their slope is equal, in magnitude, to the relative price of the goods.***
 - Baskets on indifference curves further away from the origin provide more satisfaction than those which are closer to the origin.