

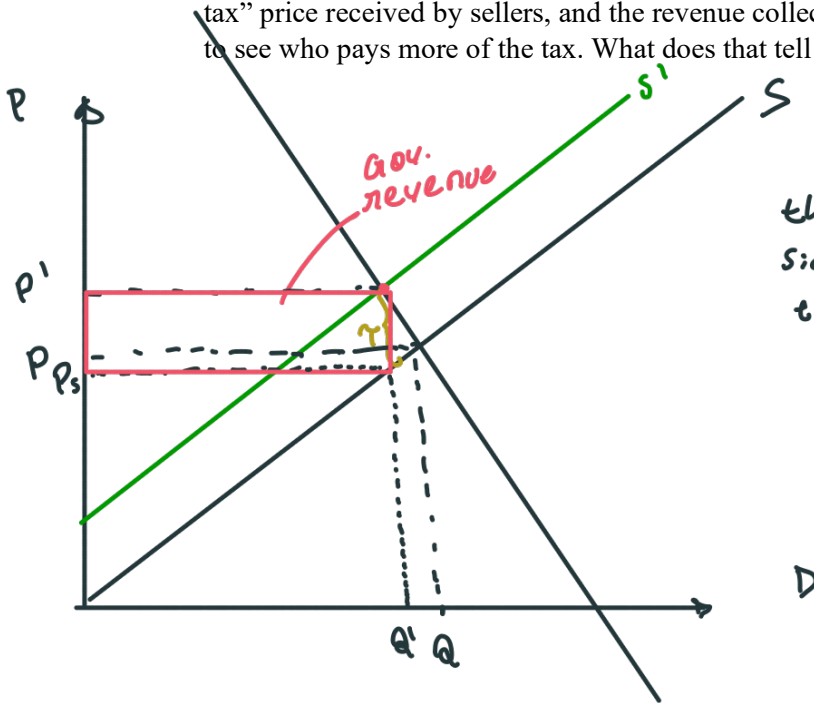
ECON 101

TA Worksheet Module 6 (Taxes and Market Controls)

Name: _____

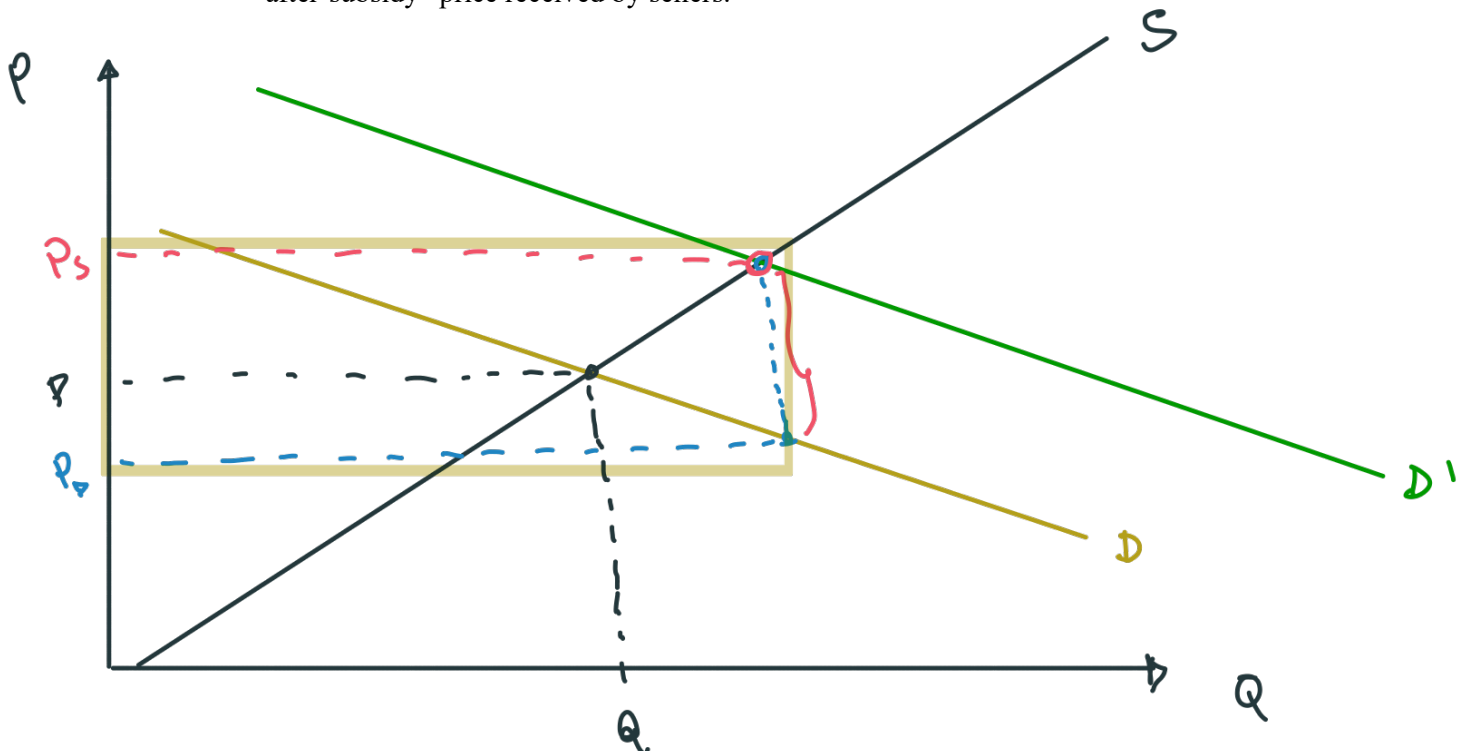
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1. Draw a market. Then show what happens when a tax is applied to the supply side. Label the initial price and quantity, the “after tax” quantity, the “after-tax” price paid by buyers, the “after-tax” price received by sellers, and the revenue collected by the government. Look at your picture to see who pays more of the tax. What does that tell you about elasticities?

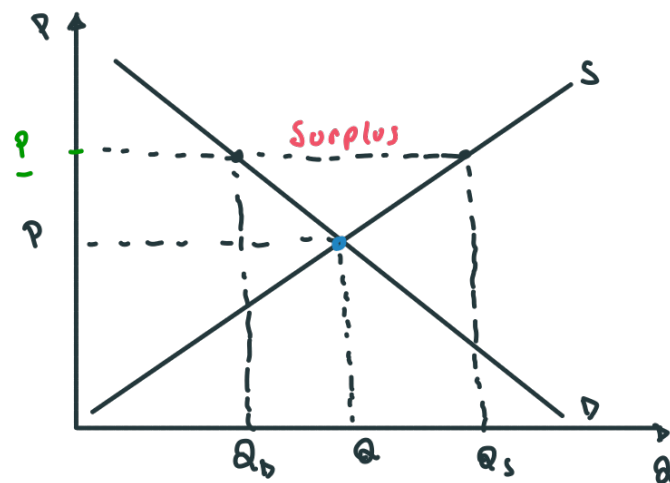
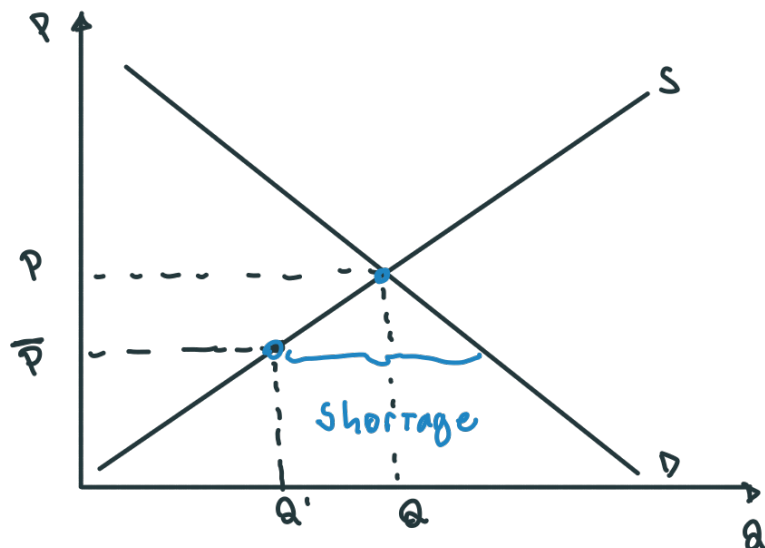


the more inelastic side "pays" more of the tax.

2. Draw a market. Then show what happens when a subsidy is given to consumers. Label the initial price and quantity, the “after subsidy” quantity, the “after-subsidy” price paid by buyers, the “after-subsidy” price received by sellers.



3. Draw a market with an effective price floor or ceiling (choose one – and indicate what you are drawing). Label the quantity supplied and the quantity demanded. Show the surplus or shortage.



4. Consider the market for watches where the market demand and market supply curves are given by the equations below where P is the price per watch unit and Q is the quantity of watches measured in watch units.

Market Demand: $P = 500 - 10Q$

Market Supply: $P = 100 + (10/3)Q$

- a. Given the above information, find the equilibrium price and quantity in this market.

$$500 - 10Q = 100 + \frac{10}{3}Q \quad \Leftrightarrow \quad 400 = 10Q + \frac{10}{3}Q$$

$$\Leftrightarrow 1200 = 30Q + 10Q \quad \Leftrightarrow \quad \frac{1200}{40} = Q \quad \Rightarrow \quad Q = 30$$

$$\text{So:} \quad P = 500 - 10(30) = 200 \quad . \quad (P, Q) = (200, 30)$$

Suppose that the government in this economy decides to impose a tax of \$50 per watch on producers of watches.

- b. Given this excise tax, write an equation that represents the supply curve in this market now that producers have this new additional cost.

$$P = MC = 100 + 50 + \left(\frac{10}{3}\right)Q$$

P_p and $P_c = P_p + t.$

So for every Q , new P is plus 50

$$\text{so} \quad P = 150 + \frac{10}{3}Q$$

c. Given this tax, find the new price consumers will pay for a watch in this market, the new price producers will receive for a watch in this market (after paying the tax), and the new equilibrium quantity of watches that will be sold in this market.

So now: $P = 150 + \frac{10}{3}Q = 500 - 10Q$

$$\Rightarrow \left(10 + \frac{10}{3}\right)Q = 350 \Rightarrow 40Q = 1050$$

$$Q = \frac{1050}{40} = 26.25$$

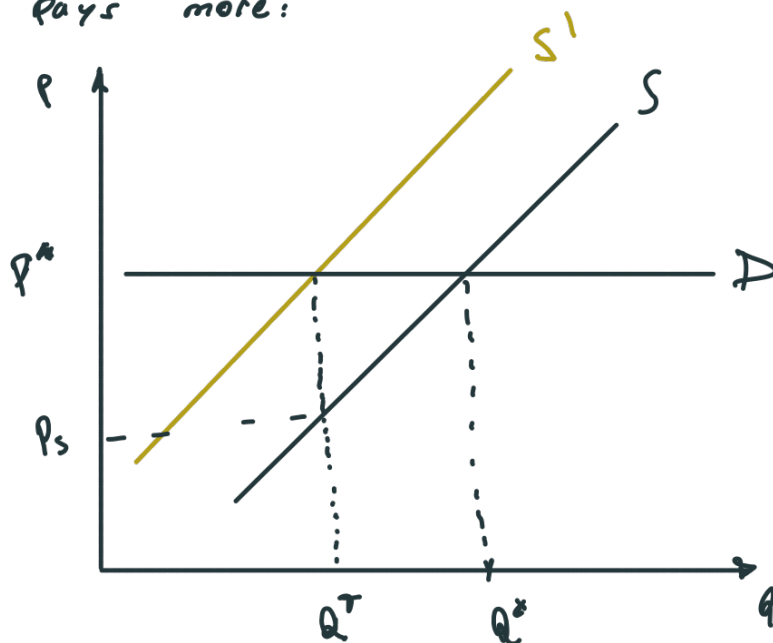
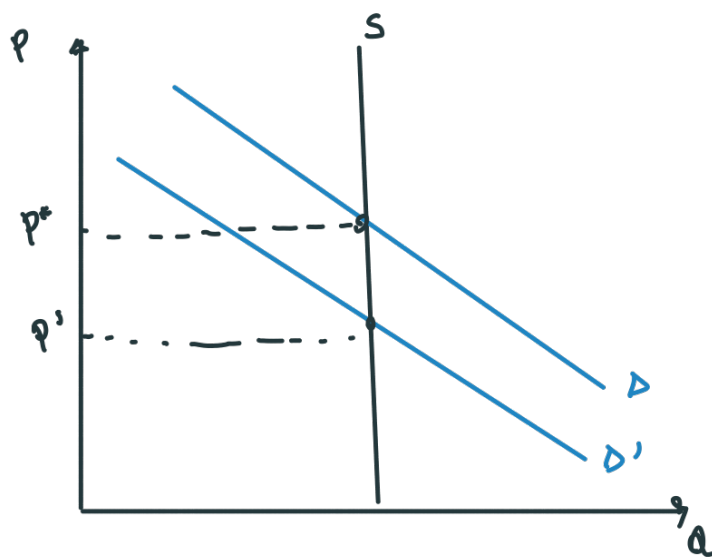
So new $P_c = 237.5$

$P_p = 187.5$

OPTIONAL

5. Under what circumstance(s) would a seller pay the FULL tax on a product? Draw them.

Two: more inelastic side pays more:





Question 2

1 pts

When the price of good X rises, the income effect dominates the substitution effect (consumers need to consume less of other goods to offset the increased spending on good X). What do you think this tells us about good X?

- ☒ It tells us that the price elasticity of demand is likely quite inelastic.
- ☐ It tells us that good X is an inferior good.
- ☐ It tells us NOTHING!
- ☐ It tells us that good X has a high income elasticity of demand.
- ☐ It tells us that the price elasticity of demand is likely quite elastic.