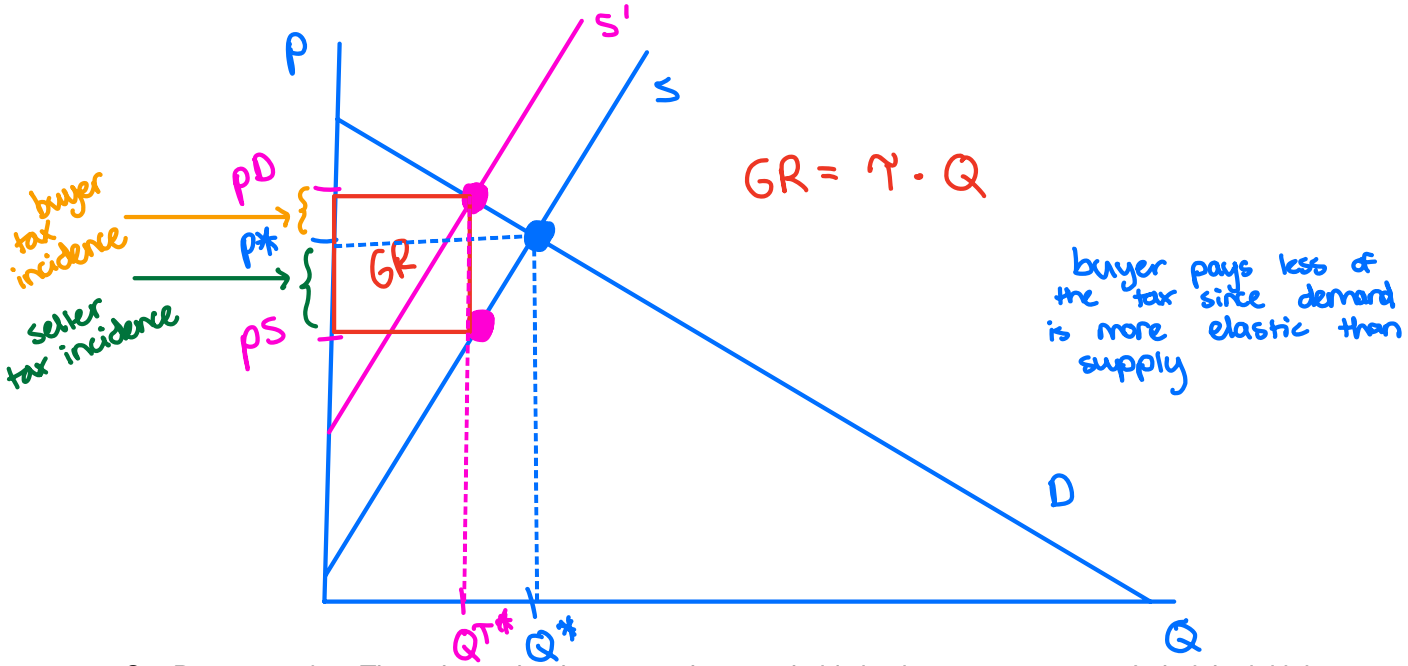
ECON 101

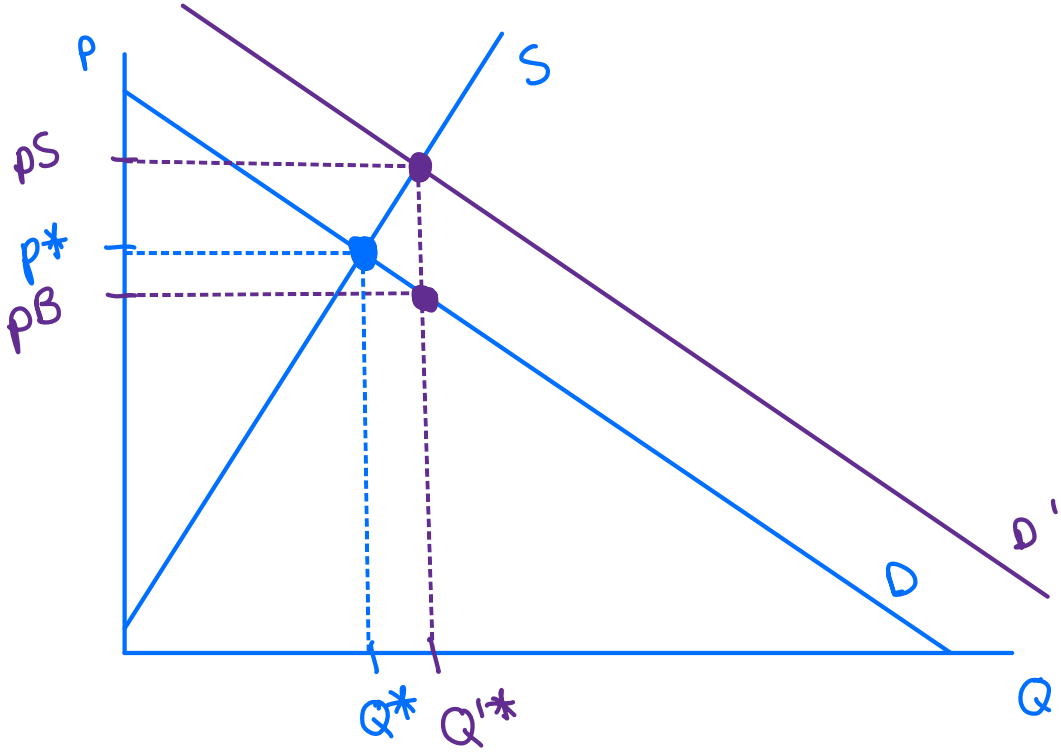
TA Worksheet Module 6 (Taxes and Market Controls)

Name:_____ TA:_____

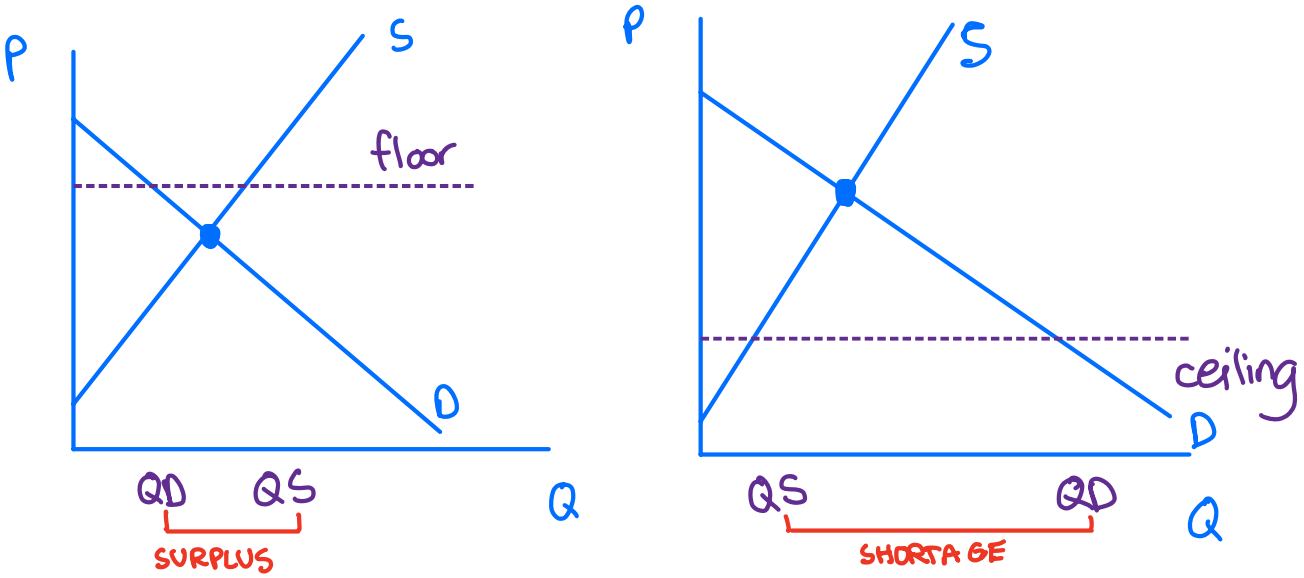
1. Draw a market. Then show what happens when a tax is applied to the supply side. Label the initial price and quantity, the "after tax" quantity, the "after-tax" price paid by buyers, the "after-tax" price received by sellers, and the revenue collected by the government. Look at your picture to see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



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.

$500 - 10Q = 100 + \frac{10}{3}Q$
$-100 \qquad -100$
$400 - 10Q = \frac{10}{3}Q$
$+10Q \quad +10Q$
$400 = \frac{40}{3}Q$

$1200 = 40Q$
$Q = 30$

$P = 500 - 10(30) = 200$
$P = 100 + \frac{10}{3}(30) = 200$

$P^* = 200$
$Q^* = 30$

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.

$P = 100 + \frac{10}{3}Q + 50$

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

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.

$150 + \frac{10}{3}Q = 500 - 10Q$

$-150 \qquad -150$

$\frac{10}{3}Q = 350 - 10Q$

$+10Q \qquad +10Q$

$\frac{40}{3}Q = 350$

$Q = 26.25$

$P^B = 500 - 10(26.25)$

$= 237.5$

$P^S = 100 + \frac{10}{3}(26.25)$

$= 187.5$

buyer's tax incidence:

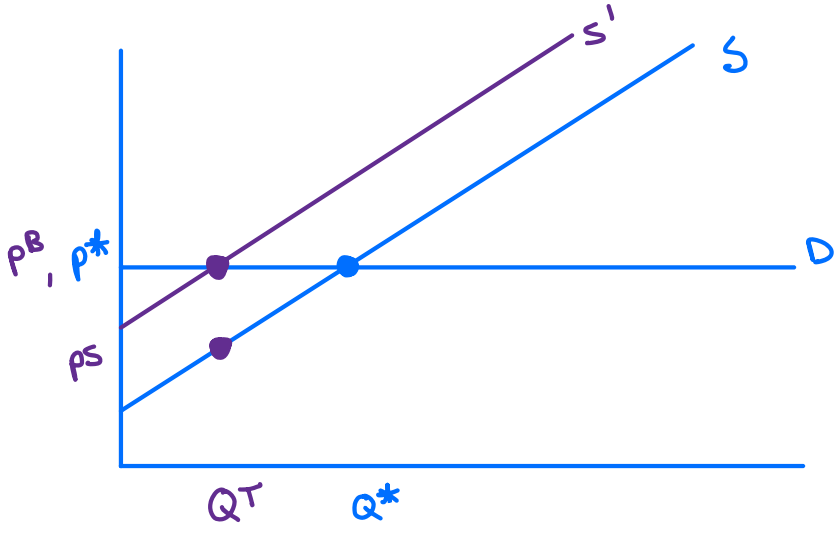
$237.5 - 200 = \$37.5$

seller's tax incidence:

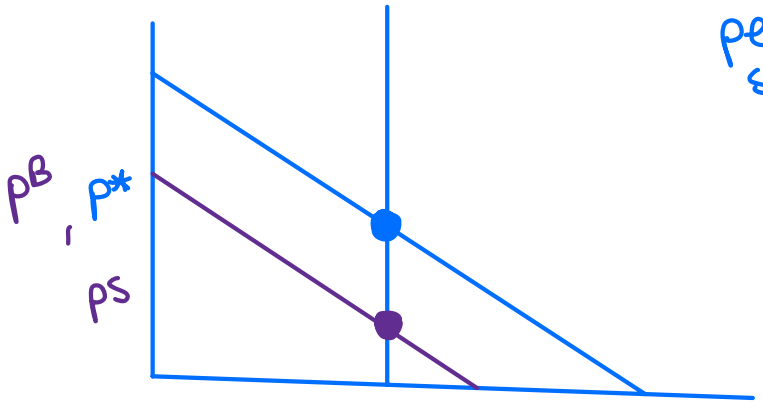
$200 - 187.5 = \$12.5$

OPTIONAL

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



perfectly elastic demand



perfectly inelastic supply

NOTE: w/ perfectly inelastic / elastic curves, it is difficult to graphically represent shifts accurately... shift the non perfectly (in)elastic curve.