

Quiz #2 (answer key)
ECNS 432
Spring 2017

Name _____

1.) Suppose that the current market equilibrium for a good is such at $p^* = \$70$ and $q^* = 20$. Also suppose that the elasticity of supply is 1.5 and the supply curve is linear.

a.) (5 points) Use the price elasticity of supply and market equilibrium to solve for the supply curve.

·In general, a linear supply curve can be represented by

$$q = a + (\Delta q / \Delta p)p \quad (1)$$

·Using the formula for the elasticity of supply, we can solve for the slope of the supply curve

$$\epsilon_s = (\Delta q / \Delta p)(p/q)$$

$$\Rightarrow 1.5 = (\Delta q / \Delta p)(70/20)$$

$$\Rightarrow \Delta q / \Delta p = 3/7$$

·Plugging the slope and market equilibrium points into (1), we can solve for the intercept:

$$20 = a + (3/7)(70)$$

$$\Rightarrow a = -10$$

·Finally, we can write the supply curve as

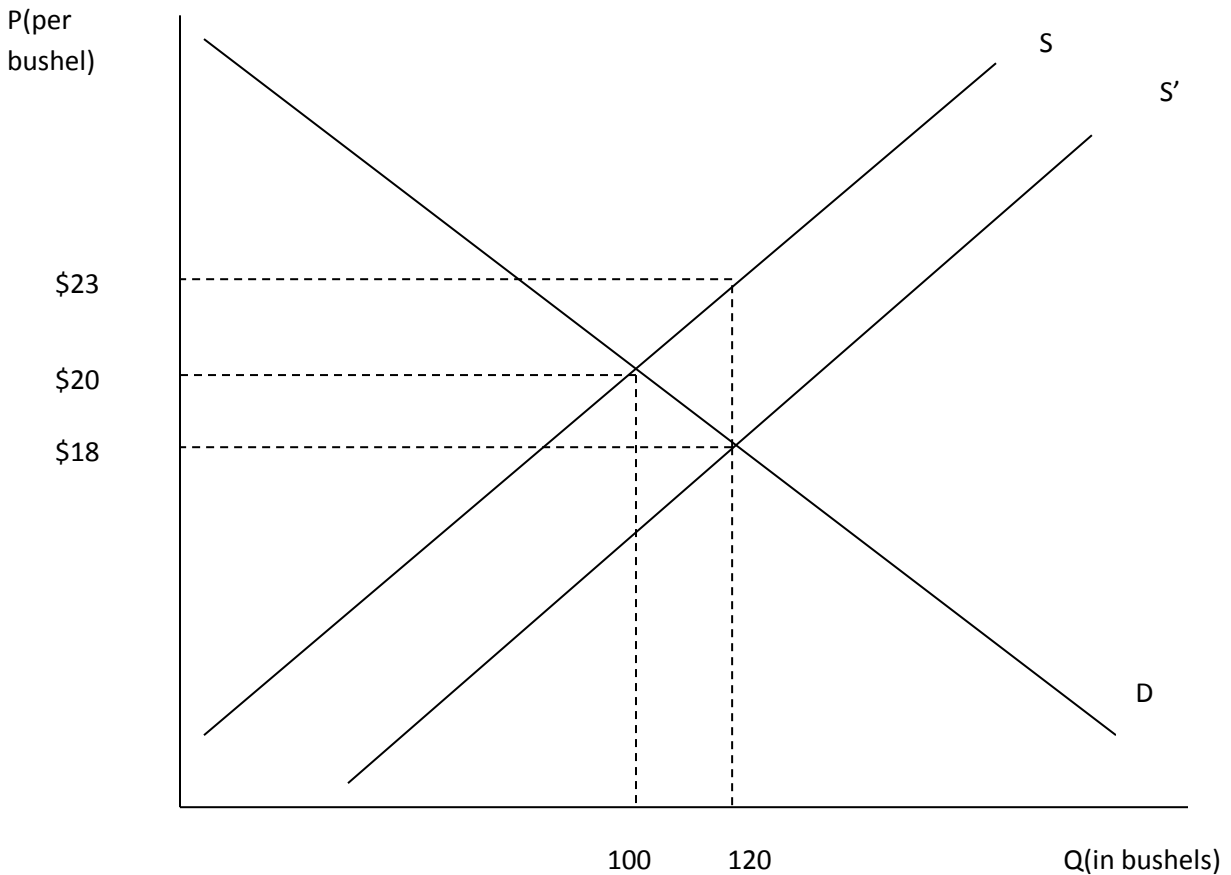
$$q = -10 + (3/7)p$$

b.) (5 points) Suppose a policy is enacted such that the price falls from \$70 to \$50. By how much does producer surplus fall? Show this graphically and calculate the Δps .



2.) Welfare Analysis

It is often the case that the government will give subsidies to wheat farmers.



The graph above depicts a per bushel subsidy given to farmers in the wheat market. As shown, the supply curve shifts to the right for the case of a subsidy (i.e. S' represents the supply curve after the subsidy has been given to farmers).

- (5 points) According to this graph, how much is the subsidy per bushel that farmers receive?
 $\text{Subsidy per bushel} = \$23 - \$18 = \5
- (5 points) Shade the area, in the graph above, that represents the dead weight loss.
 $\text{Shade the triangular area above demand and below the original supply curve and between } q=100 \text{ and } q=120$
- (5 points) What is the **net** cost to consumers of the subsidy program? (Note: consumers are also taxpayers).
 $\text{Net cost} = (\$5/\text{bushel})(120 \text{ bushels}) - [(\$2/\text{bushel})(100 \text{ bushels}) + (.5)(\$2/\text{bushel})(20 \text{ bushels})] = \$380.$