

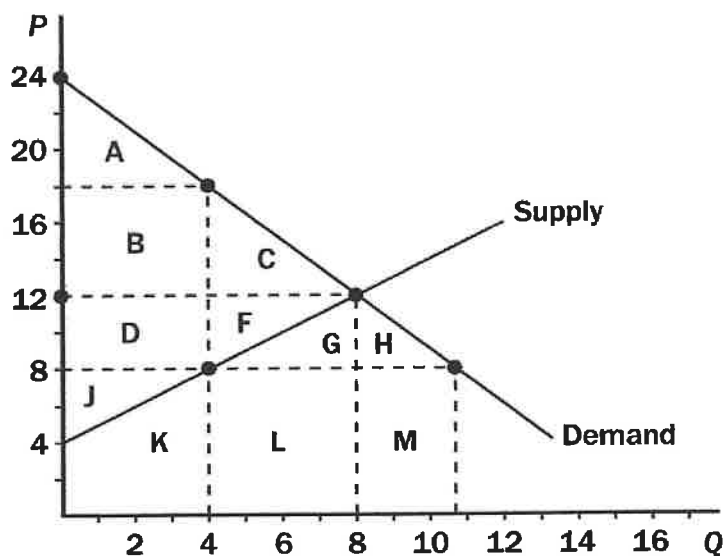
Answers

EC 11

Problem Set 4 – Due 3/28

1.) Refer to the figure below for the following questions:

- What is consumer surplus at equilibrium?
- What is producer surplus at equilibrium?
- What is consumer surplus if the tax shown pushes quantity to 4?
- What is producer surplus with the same tax?
- What is deadweight loss?



$$a.) \frac{1}{2} (12) (8)$$

$$c.) = 48$$

$$b.) \frac{1}{2} (8) (8)$$

$$PS = 32$$

$$c.) \frac{1}{2} (6) (4)$$

$$c.) = 12$$

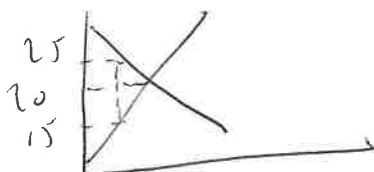
$$d.) \frac{1}{2} (4) (4)$$

$$PS = 8$$

$$e.) 80 - 20 = 40$$

$$DWL = 20$$

- 2.) John has been in the habit of mowing Hannah's lawn each week for \$20. John's opportunity cost is \$15, and Hannah would be willing to pay \$25 to have her lawn mowed. What is the maximum tax the government can impose on lawn mowing without discouraging John and Hannah from continuing their mutually beneficial arrangement?

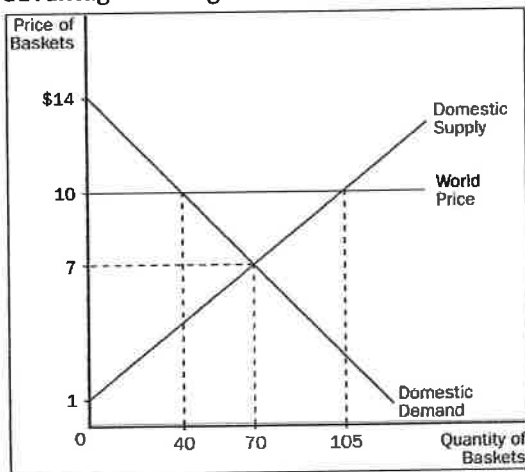


$$\text{Max tax} = \$10$$

because there would be a \$10 gap between the price Hannah pays and John receives, making the price \$25.

3.) Use the graph below to answer the following questions:

- Without trade, CS is
- Without trade, PS is
- With free trade the country will import or export the good? How much will be imported or exported?
- If the country chooses to trade, what is the price of the good?
- With trade, what is CS?
- With trade, what is PS?
- How much does total surplus increase with trade? Does the country have a comparative advantage in this good?



$$a.) \frac{1}{2}(7)(70) = 245 \quad b.) \frac{1}{2}(6)(70) = 210$$

c.) Export + 65 units.

d.) \$10

$$e.) \frac{1}{2}(4)(40) = 80$$

$$f.) \frac{1}{2}(9)(105) = 472.5$$

$$g.) TS_{\text{Before}} = 245 + 210 = 455$$

$$TS_{\text{After}} = 472.5 + 80 = 552.5$$

Increase of 97.5

Yes, which
which not
export.