

Write all answers legibly and clearly. Show your work to get full credit on this quiz.

1. Consider the market for birdhouses in Microvia, a small, closed economy. This market can be described by the following domestic demand and supply curves where P is the price per birdhouse and Q is the quantity of birdhouses:

$$\text{Domestic Demand Curve for Birdhouses: } P = 20 - (1/5)Q$$

$$\text{Domestic Supply Curve for Birdhouses: } P = 4 + (1/15)Q$$

- a. (1 point) If this market is closed to trade, what is the equilibrium price of each birdhouse and what is the equilibrium quantity of birdhouses? Show your work for full credit.

Answer:

$$20 - (1/5)Q = 4 + (1/15)Q$$

$$16 = (3/15)Q + 1/15)Q$$

$$16 = (4/15)Q$$

$$Q = 60 \text{ birdhouses}$$

$$P = 20 - (1/5)(60) = 20 - 12 = \$8 \text{ per birdhouse or}$$

$$P = 4 + (1/15)(60) = 4 + 4 = \$8 \text{ per birdhouse}$$

- b. (1point) If this market is closed to trade, what is the value of consumer surplus (CS) and producer surplus (PS) in this market? Show your work for full credit and make sure you include units of measurement.

Answer:

$$CS = (1/2)(\$20 \text{ per birdhouse} - \$8 \text{ per birdhouse})(60 \text{ birdhouses})$$

$$CS = \$360$$

$$PS = (1/2)(\$8 \text{ per birdhouse} - \$4 \text{ per birdhouse})(60 \text{ birdhouses})$$

$$PS = \$120$$

- c. (1 point) Suppose that this market opens to trade and that the world price is \$10 per birdhouse. How many birdhouses will domestic consumers demand given this information? How many birdhouses will domestic producers produce given this information?

Domestic consumers will demand _____.

Domestic producers will supply _____.

Answer:

If the world price is \$10, then domestic consumers will demand:

$$10 = 20 - (1/5)Q$$

$$10 = (1/5)Q$$

Q domestically demanded = 50 birdhouses

If the world price is \$10, then domestic producers will supply:

$$10 = 4 + (1/15)Q$$

$$6 = (1/15)Q$$

Q domestically supplied = 90 birdhouses

40 birdhouses will be exported if this market opens to trade and the world price is \$10 per birdhouse.

Domestic consumers will demand 50 birdhouses.

Domestic producers will supply 90 birdhouses.

- d. (1 point) Suppose that this market opens to trade and that the world price is \$5 per birdhouse. How many birdhouses will domestic consumers demand given this information? How many birdhouses will domestic producers produce given this information?

Domestic consumers will demand _____.

Domestic producers will supply _____.

Answer:

If the world price is \$5, then domestic consumers will demand:

$$5 = 20 - (1/5)Q$$

$$15 = (1/5)Q$$

Q domestically demanded = 75 birdhouses

If the world price is \$5, then domestic producers will supply:

$$5 = 4 + (1/15)Q$$

$$1 = (1/15)Q$$

Q domestically supplied = 15 birdhouses

60 birdhouses will be imported if this market opens to trade and the world price is \$5 per birdhouse.

Domestic consumers will demand 75 birdhouses.

Domestic producers will supply 15 birdhouses.

- e. (2 points) Suppose that this market opens to trade and that the world price is \$5 per birdhouse. At the same time that this market is opened to trade, the government of Microvia implements a tariff that increases the price of birdhouses by \$1 per

birdhouse. Given this information and holding everything else constant, calculate the values of the following (make sure you include the appropriate unit of measurement):

CS with the tariff = _____.

PS with the tariff = _____.

DWL due to the imposition of this tariff = _____.

Tariff Revenue for the Government = _____.

Show your work for full credit, but put your answers in the above blanks.

Answer:

CS with the tariff = $(1/2)(\$20 \text{ per birdhouse} - \$6 \text{ per birdhouse})(70 \text{ birdhouses})$

CS with the tariff = $(\$7 \text{ per birdhouse})(70 \text{ birdhouses}) = \490

PS with the tariff = $(1/2)(\$6 \text{ per birdhouse} - \$4 \text{ per birdhouse})(30 \text{ birdhouses})$

PS with the tariff = $\$30$

DWL due to the imposition of this tariff = $(1/2)(\$6 \text{ per birdhouse} - \$5 \text{ per birdhouse})(30 \text{ birdhouses} - 15 \text{ birdhouses}) + (1/2)(\$6 \text{ per birdhouse} - \$5 \text{ per birdhouse})(75 \text{ birdhouses} - 70 \text{ birdhouses})$

DWL due to the imposition of this tariff = $\$10$

Tariff Revenue for the Government = $(\$1 \text{ per birdhouse})(70 \text{ birdhouses} - 30 \text{ birdhouses})$

Tariff Revenue for the Government = $\$40$

CS with the tariff = _____ $\$490$ _____.

PS with the tariff = _____ $\$30$ _____.

DWL due to the imposition of this tariff = _____ $\$10$ _____.

Tariff Revenue for the Government = _____ $\$40$ _____.

2. (2 points: 1 point for explanation and 1 point for numeric value) What is the impact on this year's GDP of the following transaction? Susie sells her Uncle Gus 100 shares of stock in Coca-Cola for \$5 per share during this year. In addition, Susie purchases an antique desk for \$500 from Charley's Antiques this year: \$400 of this purchase represents the value of the desk and \$100 represents the fee the antique dealer charges for her services. This year Susie also manufactures 200 widgets that sell for \$10 per widget in the local supermarket. Explain briefly the impact on GDP of these transactions and determine a dollar amount of the impact on GDP.

Answer:

The stock sale does not impact GDP for this year since this transaction does not represent any new production for the year and is instead only a change in the ownership of a financial asset. The sale of the desk contributes \$100 to GDP for this year for the production represented by the services provided by the antique dealer. The value of the desk does not get counted since it was counted in GDP the year the desk was manufactured. The value of the widgets (200 widgets * \$10 per widget or \$2000) does get counted in GDP this year since it represents new production of final goods that occurred this year. GDP is impacted by \$2100 due to these transactions.

3. (2 points) For each of the following individuals decide whether they are employed, unemployed, or not in the labor force.

a. George is 22 years old and works 3 hours a week for pay at his uncle's deli. George is _____.

b. Marcy is 45 years old, is currently not working, is looking for work, but is leaving tomorrow for a two week long trip to Costa Rica. Marcy is _____.

c. Michele is 15 years old and is currently working thirty hours a week for pay as a life guard. Michele is _____.

d. Weston is 58 years old and worked for thirty years as a coal worker. For the past five years Weston has not been working, but he has been available to work, has applied for work every week and he hopes to find a job soon. Weston is _____.

Answers:

George is employed.

Marcy is not in the labor force since she is not available for work if she is traveling for the next two weeks.

Michele is not in the labor force despite the hours she is working since she is not at least sixteen years old.

Weston is unemployed since he is not working, is available to work, and is actively applying for positions.