Economics 102
Summer 2018
Quiz #2

Name ANNOTATED KEY

To get full credit on this quiz you must show your work and you must do your work neatly.

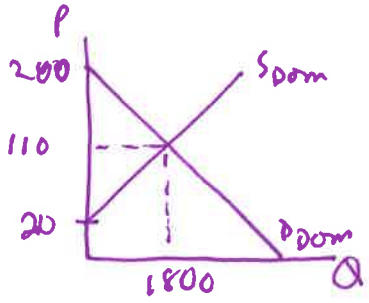
1. Pakoa is a small, closed economy that produces only cellphones. The domestic demand and domestic supply curves for cellphones in Pakoa is given by the following equations, where P is the price per unit and Q is the quantity of cellphones:

   Domestic Demand: $P = 200 - (1/20)\,Q$
   Domestic Supply: $P = 20 + (1/20)\,Q$

   The world price is $80 per cellphone.

   a. (2 points) Compute the values of each of the following if Pakoa keeps its cellphone market closed to trade. Show your work to get full credit.

   Consumer Surplus if closed market = #81,000
   Producer Surplus if closed market = #81,000
   Equilibrium Price if closed market = #110/cellphone
   Equilibrium Quantity if closed market = 1800 cellphones



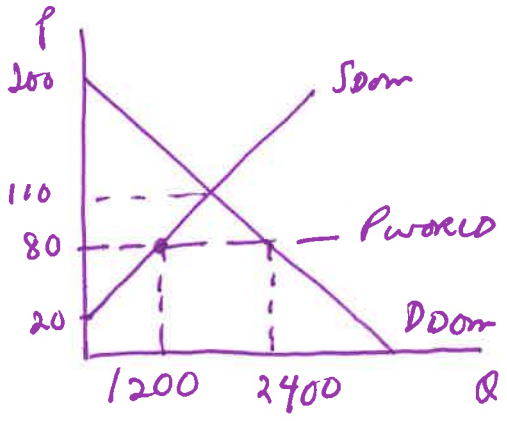
$200 - \frac{1}{20}Q = 20 + \frac{1}{20}Q$
$180 = \frac{1}{10}Q$
$1800 = Q$
$P = 200 - \frac{1}{20}(1800) = 110$

$CS_{CLOSED} = \frac{1}{2}(200-110)(1800)$
$= (90)(900) = \#81,000$

$PS_{CLOSED} = \frac{1}{2}(110-20)(1800)$
$= (90)(900) = \#81,000$

   b. (2 points) Compute the values of each of the following if Pakoa allows its cellphone market to be opened to trade. Show your work to get full credit.

   Consumer Surplus if open market = #144,000
   Number of cellphones supplied domestically if open market = 1200 cellphones
   Producer Surplus if open market = #36,000
   Quantity of cellphones bought if open market = 2400 cellphones



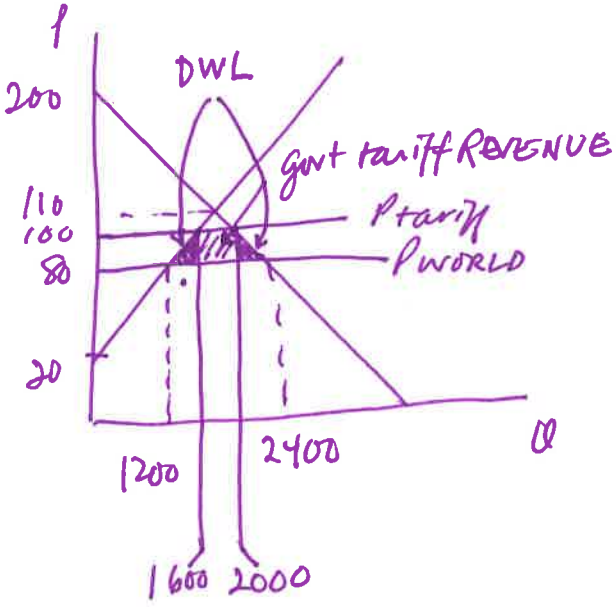
if $P = 80 \Rightarrow 80 = 200 - \frac{1}{20}Q^D_{Dom}$
$\frac{1}{20}(Q^D_{Dom}) = 120$
$Q^D_{Dom} = 2400$
$\Rightarrow 80 = 20 + \frac{1}{20}Q^S_{Dom}$
$60 = \frac{1}{20}Q^S_{Dom}$
$Q^S_{Dom} = 1200$

$CS_{open} = \frac{1}{2}(200-80)(2400)$
$CS_{open} = (60)(2400)$
$CS_{open} = \#144,000$

$PS_{open} = \frac{1}{2}(80-20)(1200)$
$PS_{open} = 30(1200)$
$PS_{open} = \#36,000$

c. (2 points) Suppose that the cellphone market is open to trade, but that the government implements a tariff of $20 per imported cellphone. Compute the values of each of the following for Pakoa given these changes. Show your work to get full credit.

Number of cellphones demanded domestically with the tariff = 2000 cellphones
Number of cellphones imported with the tariff = 400 cellphones
Deadweight loss due to imposition of the tariff = #8000
Government tariff revenue = #8000



if $P = 100 \Rightarrow$

$100 = 200 - \frac{1}{20} Q^D_{Dom\ w/\ tariff}$

$\frac{1}{20} Q^D_{Dom\ w/\ TARIFF} = 100$

$Q^D_{Dom\ w/\ TARIFF} = 2000$

$100 = 20 + \frac{1}{20} Q^S_{Dom\ w/\ TARIFF}$

$80 = \frac{1}{20} Q^S_{Dom\ w/\ TARIFF}$

$Q^S_{Dom\ w/\ TARIFF} = 1600$

$Imports = Q^D_{Dom\ w/\ TARIFF} - Q^S_{Dom\ w/\ TARIFF} = 2000 - 1600 = 400$

$DWL = \frac{1}{2}(100-80)(1600-1200) + \frac{1}{2}(100-80)(2400-2000)$

$DWL = (10)(400) + (10)(400) = 4000 + 4000 = \#8000$

Govt tariff revenue $= (100-80)(2000-1600) = 20(400) = \#8000$

2. (2 points) For each scenario determine what kind of unemployment is represented by the description.

   a. Suppose during a recession Samantha decides it is time for a change in her job, so she quits her job as a legal assistant and decides to look for a new job as a bread baker. Samantha's unemployment is an example of FRICTIONAL unemployment.

   b. McDonald's makes the hard decision to fire Ronald McDonald and replace him with a burger-flipping robot. Ronald McDonald's unemployment is an example of STRUCTURAL unemployment.

   c. Marcy's neighbors are now paying $10 an hour for a babysitter. Marcy would be willing to do this work for $8 an hour but she never gets hired by the neighbors due to their loyalty and commitment to their favorite babysitter, Nancy. Marcy's unemployment is an example of STRUCTURAL unemployment.

   d. Joe is a member of a Heavy Machinery Union and he is a skilled operator of steam shovels, paving machines, and large tonnage trucks. But Joe lives in Alaska and his skills are not in demand from November through April. Joe knows with certainty that he will be hired May through October. Joe's unemployment this past February is an example of SEASONAL unemployment.

3. (2 points) Use the following data to answer the next question:

Fruits Incorporated		Rejuicinated Co	
Revenues		**Revenues**	
Sales to Rejuicinated Co	$15,000	Sales of juice to customers	
Expenses		**Expenses**	
Wages	$8000	Inputs: Fruits, Inc.	$15,000
Profits	$500	Wages	$11,000
Rent	$750	Rent	$7000
Interest Payments	$400	Profits	$4000

Suppose you are told that GDP is equal to $32,000. Given this information and holding everything else equal to zero, what are the values for the following? Show your work to get full credit.

Interest payments made by Rejuicinated Co. #350

The value added by Rejuicinated Co. #17,000

GDP = 32,000

GDP = WAGES + RENT + INTEREST + PROFITS

32,000 = [8000 + 11,000] + [750 + 7000] + [400 + Interest Payments by Rejuicinated] + [500 + 4000]

32,000 = 19,000 + 7750 + 400 + INTEREST PAYMENT BY REJUICINATED + 4500

32,000 = 31,650 + INTEREST PAYMENT

#350 = INTEREST PAYMENT

VA BY FRUITS INC = 15,000

VA BY REJUICINATED = 32,000 − 15,000 = 17,000

19000
7750
400
4500
31650
32000
31650
350