Concordia University
Counselling and Development

Student Services

ECON 201 - MOCK EXAMINATION

Part I: Multiple Choice Questions (1Marks Each, 45 Questions, Total 45 marks)

1. If the arc price elasticity of demand is -2.0 and quantity demanded is 117, then a 30% price hike will lead to a:
   a) drop in quantity demanded by 27 units.
   b) drop in quantity demanded by 54 units.
   (c) drop in quantity demanded by 70.2 units.
   d) drop in quantity demanded by 63 units.
   e) drop in quantity demanded by 43.875 units.

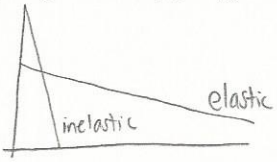
$\frac{\%\Delta Q}{\%\Delta P} = E_d$ $\quad \frac{-.60}{.30} = -2.0$ → 60% decrease

117 x .60 = 70.2 decrease

2. Johnny's monthly income has risen from $3,800 to $4,200 and as a result, he has decided to increase the number of museum tours he goes to by 5%. His demand for museum tours is:
   a) Represented by a vertical line
   b) Represented by a horizontal line
   (c) Income inelastic
   d) Income elastic

$\frac{+.05}{\frac{4200-3800}{3800}} =$ Point 0.475 or Arc 0.5

3. From the following products with their given elasticity of demand, which product would see the lowest decrease in sales from a 10% tax increase? [Popcorn at 1.50] [Chips at 0.61] [Magazines at 0.34] [Candy Bars at 1.75]
   a) Popcorn
   b) Chips
   (c) Magazines
   d) Candy Bars



* inelastic.

4. Joe is a tax accountant. He receives $80 per hour doing tax returns. He can type 20 pages per hour. He can instead hire an assistant who types 10 pages per hour. Which of the following statements is true?
   a) Joe should not hire an assistant because the assistant cannot type as fast as he.
   b) Joe should hire the assistant as long as he pays the assistant less than $100 per hour.
   c) Joe should hire the assistant as long as he pays the assistant less than $80 per hour.
   d) Joe should hire the assistant as long as he pays the assistant less than $50 per hour.
   (e) Joe should hire the assistant as long as he pays the assistant less than $40 per hour.

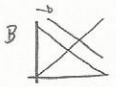
Joe = $4/page.

5. When asked in an interview what she missed the most because of the time she spent training for the Olympics, a rower revealed that she had given up a job that paid $45,000 per year to train full-time. She received a grant of $8,000 per year from Sports Canada, but this could not cover all her training expenses. Her food and rent were $10,000 per year and training expenses were $9,000 per year. What is the annual opportunity cost, expressed in dollars, to this rower of "Going for Gold"?
   a) $18,000.
   b) $34,000.
   c) $45,000.
   (d) $46,000.
   e) $56,000.

(45000) → job
+ 8000 → grant
∅ → food rent
(9000)
(46000)

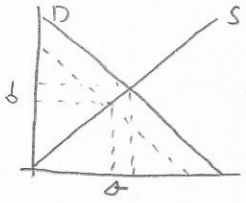
6. Goods A and B are complementary goods (in consumption). The cost of a resource used in the production of A decreases. As a result,

a) the equilibrium price of B will fall and the equilibrium price of A will rise.
(b) the equilibrium price of B will rise and the equilibrium price of A will fall.
c) the equilibrium prices of both A and B will rise.
d) the equilibrium prices of both A and B will fall.
e) the equilibrium price of B will fall by more than the rise in the equilibrium price of A.



7. All of the following will cause the demand curve to shift to the left except:

a) An increase in income if the good is inferior
(b) An increase in the price of a substitute good
c) An increase in the price of a complementary good
d) A reduction in income if the good is normal



8. Suppose Canada can produce, using all of its resources, either 750,000 m^3 of natural gas or 300,000 barrels of oil. While US can produce, using all resources, either 600,000 m^3 of natural gas or 480,000 barrels of oil. Who has the comparative advantage in producing gas and who has the comparative advantage in producing oil?

a) the US has comparative advantage in producing gas and also has the comparative advantage in producing oil.
b) the US has comparative advantage in producing gas and Canada has the comparative advantage in producing oil.
(c) Canada has comparative advantage in producing gas and the US has the comparative advantage in producing oil.
d) Canada has comparative advantage in producing both gas and oil.

9. Suppose Mary buys coffee and cookies and has not yet exhausted her budget. Her Marginal Utility (MU) of an additional cup of coffee is 45.5 and its price is $3.25, whereas her MU for an additional cookie costing $1.5 is 22.5. From this situation, we can deduce that he should:

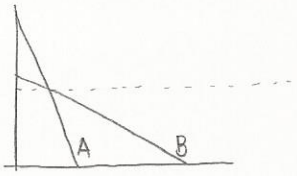
a) buy more coffee.
b) reduce his consumption of coffee.
(c) buy more cookies.
d) divide his budget equally between coffee and cookies.

	MU	Price	MU/$
Coffee	45.5	3.25	14
→ Cookie	22.5	1.50	15

10. Currently A and B are consuming the same amount of oranges, but B's (straight line) demand curve is much more elastic than A's at the current price. What conclusion can be made about their consumer surpluses?

a) B's consumer surplus exceeds A's.
b) A's consumer surplus equals B's.
c) No conclusion can be made regarding consumer surpluses.
(d) A's consumer surplus exceeds B's.

A = inelastic
B = elastic



Given the following, answer # 11 and 12

11. The following table represents the Consumer Price Index for apples over 4 years. Calculate the nominal price index (i) and the real price index (ii) for apples for 2004.

a) i) 113.33 ii) 101.59
b) i) 106.67 ii) 98.55
(c) i) 113.33 ii) 98.55
d) i) 98.55 ii) 113.33

Year	CPI	Price (Apples)
2001	94	14
2002	100	15
2003	105	16
2004	115	17

12. By how much have apples increased/decreased in price in 2001 and 2003 in comparison to the typical good consumers buy as measured by the CPI?

a) 2001: 7.41% Increase 2003: 6.67% Increase
(b) 2001: 0.71% Decrease 2003: 1.59% Increase
c) 2001: 2.89% Increase 2003: 1.05% Increase
d) 2001: 6.38% Decrease 2003: 2.35% Increase

13. In a free market, goods with positive externalities will:
    a) be over-produced in the market place.
    b) have the marginal valuation of the externality reflected in their price.
    c) be produced to the point at which the marginal social benefit equals the marginal social cost of the last unit produced.
    (d) be under-produced at the market equilibrium.

14. What is true at the Nash Equilibrium?
    a) Both players have entered a collusive agreement
    (b) Neither player has an incentive to change strategy
    c) Both players are maximizing their payoff
    d) Output is at its minimum

Given the following, answer # 15, 16 and 17
Generally, homeowners prefer to live in an unarmed society, but would buy a gun if they know criminals are armed. And criminals prefer to buy a gun as a tool in their trade – it enhances their "productivity" and hence maximizes their "profit". Suppose the table below outlines the outcomes for homeowners and criminals, where the outcomes for each group are ranked as 1, 2, 3, 4, where the most preferred outcome is 1 and the least preferred is 4. The first number is for homeowners, the second for criminals.

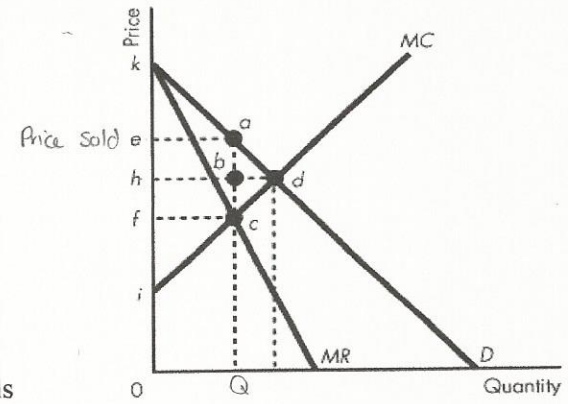
	CRIMINALS				
HOMEOWNERS		NO GUNS		GUNS	
	NO GUNS	A	1, 2	B	4, 1
	GUNS	C	2, 4	D	3, 3

15. Do homeowners have a dominant strategy? Why:
    a) Yes
    (b) No
    c) Depends on criminals strategy
    d) Depends on the type of homeowner

16. Do criminals have a dominant strategy?
    (a) Yes Why:
    b) No
    c) Depends on the homeowners strategy
    d) Depends on the type of criminal

17. What is the Nash equilibrium outcome of the game?
    a) A
    b) B
    c) C
    (d) D

Figure 1:



18. Consider Figure 1. If the industry is operated by a single-price monopolist, what area is producer surplus?

DWL = a c d

PS = e a c i

CS = k e a

a) kea.
b) iead.
c) khd.
d) ihd.
e) None of the above.

19. A diminishing marginal rate of substitution implies that individuals
a) Get more utility from a good when they have less of it
(b) Get greater marginal utility from a good when they have less of it
c) Get less total utility as a result of consuming more
d) Get greater marginal utility as a result of consuming more

20. Insurance of houses in different provinces is an example of:
a) Risk spreading (insurance) Why:
b) Reinsurance
c) Fair gamble
(d) Risk pooling (mutual funds)

21. The variable cost of producing one extra bag of sweets is $8 and the fixed cost of production is $14. The market price of a bag of sweets is $12 and 15 of them are sold by the firm. The profit of the company is:
a) $\pi = 180$
(b) $\pi = 46$
c) $\pi = 120$
d) $\pi = 60$

Fixed = $14
Variable = $8
Sold at = $12
sold = 15 units

Rev: 12 x 15 = 180
Cost: 8 x 15 = 120
− 14
134

Profit
180
− 134
46

Given the following, answer #22 and 23:

22. You have $2000 to invest. You can either invest all of your money in Pear or in Sun. Pear will give you 7% return with probability of 30% or loss of 4% with 70% probability. Sun will give you 9% return with probability of 25% or loss of 5% with 75% probability. Investing in which company will give you a higher yield on average?
(a) Pear
b) Sun
c) Both give the same average outcome
d) Given information is not enough to determine

23. Considering the conditions of the previous problem, which investment strategy is riskier? (Hint: compare the dispersion of outcomes using the variance)
(a) Investing in Pear
b) Investing in Sun
c) Both are equally risky
d) Given information is not enough to determine

Invest in Pear as it has a lower variance, thus less variation = less risk

Pear = 0.002541
Sun = 0.003675

Given the following, answer #24 to 31

The market for printers is given by the following demand and supply equations:
Demand: P=220 – 6Q, Supply: P=20 + 4Q

24. What is the equilibrium market price and quantity?
    a) Price = $24, Quantity = 76
    b) Price = $20, Quantity = 100
    (c) Price = $100, Quantity = 20
    d) Price = $76, Quantity = 24

25. Suppose the government decides to subsidize printers by giving suppliers a $20 subsidy for every unit they produce. What is the new market equilibrium? You must also be able to illustrate the changes graphically for your final exam.
    a) Price = $80, Quantity = 20
    b) Price = $100, Quantity = 22
    c) Price = $112 , Quantity = 18
    (d) Price = $88, Quantity = 22

26. What is the cost to the government by giving the $20 subsidy?
    a) No Cost
    (b) $440
    c) $400
    d) $264

    Q = 22
    $20 x 22 = 440

27. What is the consumer surplus (with subsidy)?
    (a) $1,452
    b) $1,200
    c) $968
    d) $578

28. What is the producer surplus (with subsidy)?
    a) $1,452
    b) $1,200
    (c) $968
    d) $578

29. What is the deadweight loss (with subsidy)?
    a) $20
    b) $15
    c) $40
    (d) None of the above

    No DWL

30. What is the quantity traded if there were no subsidy, but instead a price ceiling of P = 76$?
    a) 76
    b) 24
    (c) 14
    d) 20 (no effect because ceiling is below current equilibrium)

31. What is the deadweight loss (with price ceiling)?
    a) $180
    b) $360
    c) $228

    * Note: d) on wrong page.

(d) None of the above

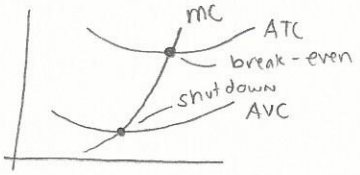
32. A logical view of how things work, and is frequently formulated on the basis of observation is known as a:
    a) Model
    b) System
    (c) Theory
    d) Basis

33. Payments made from after-tax profits is known as:
    a) Retained Earnings
    (b) Dividends
    c) Initial Public Offering
    d) Installment

34. A combination of assets that is designed to secure an income from investing and to reduce risk is known as:
    a) Risk Spreading
    b) Risk Pooling
    c) Diversification
    (d) Portfolio

35. A sunk cost is a fixed cost.
    (a) True
    b) False

36. In a perfect competition, the break-even price corresponds to the minimum of the:
    (a) ATC Curve
    b) MC Curve
    c) AVC Curve
    d) AFC Curve



37. If a firm's output increases from 23 to 50 units when it increases its labour from 14 to 15 workers, the marginal product is:

50 - 23 = 27
15 - 14 = 1

$MP = \frac{\Delta Q}{\Delta L} \rightarrow \frac{27}{1} = 27$

    a) 23
    b) 50
    (c) 27
    d) 25

38. What are the values of Q1 and Q2 using substitution? $Q_1 = \frac{250 - Q_2 + 50}{5}$ $Q_2 = \frac{350 - Q_1 + 75}{5}$
    (a) Q1 = 44.79 Q2 = 76.04
    b) Q1 = 80.21 Q2 = 68.96
    c) Q1 = 40.83 Q2 = 95.83
    d) Q1 = 53.75 Q2 = 74.25

39. **Given the following, answer #39 and 40**

Demand: P = 120 – Q MC = ATC = 42 MR = 120 – 2Q

Assuming we are in a monopolistic environment, find the equilibrium price and quantity given the information above.

    a) Price = $42 Quantity = 39
    b) Price = $81 Quantity = 42
    c) Price = $39 Quantity = 42
    (d) Price = $81 Quantity = 39

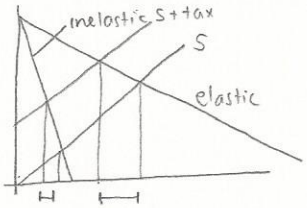
40. What is the profit of the monopoly?

a) $1,638
b) $3,159
c) $1,521
d) $4,229

41. If your income falls and you increase your consumption of McDonalds, this suggests that McDonalds

a) Is a normal good
b) Is a complimentary good
c) Is an inferior good
d) Is a substitute good

42. If people argue that a tax towards cigarettes will only reduce smoking by a small amount, this means the demand curve for cigarettes is:



a) At unit elastic
b) Inelastic
c) Elastic
d) None of the above

43. If all firms in a perfectly competitive industry are experiencing economic losses, one can predict that:

a) Market supply will increase
b) Market demand will decrease
c) Market price will decrease
d) Market price will increase

44. Suppose the price for tomatoes rises from $2.95 to $3.05, and as a result, the quantity of potatoes increases from 3950 to 4050. The arc cross-price elasticity is?

a) -1.33
b) -0.75
c) 0.75
d) 1.33

$$\frac{\frac{4050 - 3950}{4000}}{\frac{3.05 - 2.95}{3.00}} = \frac{0.025}{0.033} \rightarrow 0.75$$

45. A demand curve slopes downward because:

a) Since the marginal utility decreases with increased consumption, the price must fall in order to induce people to buy more
b) Lower prices mean a lower consumer surplus which will encourage increased consumption
c) Since the marginal utility increases with increased consumption, people will be eager to buy more at lower prices
d) Since total utility increases with increased consumption, a lower price is necessary to encourage increased production

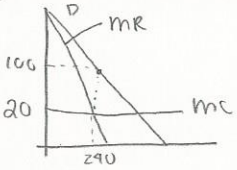
Part II: Long Answer Questions (Total = 55 marks)

Question #1 (11 marks)
The market demand curve for an industry product is given by $P = 180 - (1/3)\,Q$ and marginal and average total costs for each firm in the industry are constant at $MC = ATC = \$20$.

Rev = 100 x 240 = 24000
cost = 20 x 240 = 4800
Profit 19200

i. If the members of the industry decided to form a cartel and subsequently act like a monopolist, how much output would be produced in total and at what price would it be sold? What would be the industry profit? (3 marks)

Price = 100
Quantity = 240
Profit = 19200



D: $180 - \frac{1}{3}Q$
MR: $180 - \frac{2}{3}Q$
$180 - \frac{1}{3}(240) = 100$

$20 = 180 - \frac{2}{3}Q$
$\frac{-160}{-2/3} = \frac{-2/3\,Q}{-2/3}$ $Q = 240$

ii. Instead, suppose that there are only two firms who compete on the basis of the Cournot model. The reaction functions of these firms A and B are given respectively by QA = 240 – (1/2) QB, and QB = 240 – (1/2) QA. Solve for the profit maximizing output of each firm and the price in the market place. (4 marks)

$Q_A = 240 - \frac{1}{2}Q_B$ $Q_B = 240 - \frac{1}{2}Q_A$ $Q_A = Q_B = 160$

$Q_A = 240 - \frac{1}{2}(240 - \frac{1}{2}Q_A) \rightarrow [-120 + 0.25Q_A] + 240 \rightarrow Q_A = 120 + 0.25Q_A$
$0.75Q_A = 120$ $Q_A = 160$

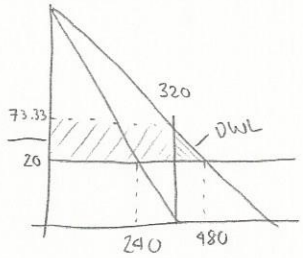
iii. Compute each firm's profit in (ii) above. Compute the DWL in the duopoly case (compared to the efficient level of output). (4 marks)

480 - 320 = 160 $Q_A + Q_B = 320$

$DWL = \frac{53.33 \times 160}{2}$

$DWL = 4266.67$

profit



$P = 180 - \frac{1}{3}Q(320)$
$180 - 106.67 = 73.33$

$Profit = 53.33 \times 320 = \frac{17066.67}{2}$

Each firm = 8533.33 profit

Question #2 (10 marks)
A consumer has an income of $120. The price of Y is Py = $8.

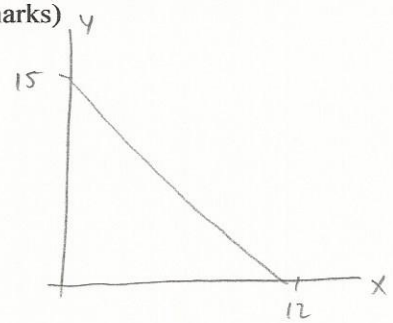
(i) The individual is observed to buy 5 units of Y and 8 of X. What is the price of X? (2 marks)

Income = $120
P_Y = $8

5 x 8 = 40
120 - 40 = 80
80 / 8 = 10

X = 10

(ii) Draw the budget constraint with intercepts calculated and illustrate the equilibrium by including the relevant indifference curve. (2 marks)



Y 120 / 8 = 15
X 120 / 10 = 12

(iii) If the MUS from consumption of X at the chosen bundle is equal to 95, find the utility obtained from consuming the fifth unit of Y. (3 marks)

	MU	Price	MU/$
X	95	10	9.5
Y	76	8	9.5

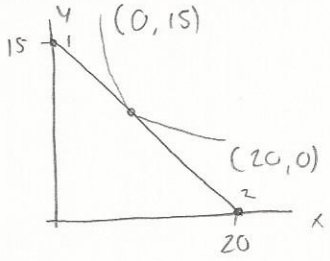
gap

(iv) Now suppose the price of X falls to \$6. What is the numerical value of the marginal rate of substitution at the new equilibrium? (Hint: it will be the same as the slope of the budget constraint). (3 marks)

$P_X = 6 \rightarrow 20$ units

$P_Y = 8 \rightarrow 15$ units

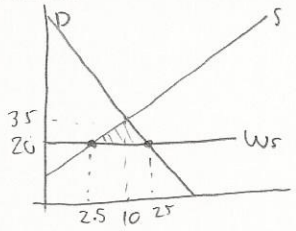
Income = 120



$\frac{Y_2 - Y_1}{X_2 - X_1} = \frac{0 - 15}{20 - 0} \quad \frac{-15}{20} = -0.75$

Question #3 (15 marks)
The domestic market for olive oil is given by P = 45 - Qd and P = 15 + 2Qs.

(i) Illustrate the domestic market and solve for the equilibrium price and quantity. (2 marks)



$45 - Q = 15 + 2Q$

$\frac{30}{3} = \frac{3Q}{3}$

Q = 10
P = 35

(ii) Now suppose olive oil can be supplied internationally at a constant price P = 20. Illustrate the market with free trade graphically, compute the total amount purchased, and compute the amount supplied by domestic and international suppliers each. (2 marks)

$20 = 45 - Qd$

$-25 = -Qd$

$Qd = 25$

$20 = 15 + 2Qs$

$5 = 2Qs$

$Qs = 2.5$

Purchased = 25 units

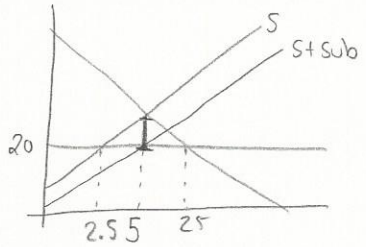
Domestic = 2.5 units

International = 22.5 units

(iii) Calculate the DWL associated with the absence of international trade. (2 marks)

(iv) Now suppose the government wants to subsidize the domestic producers so that they can supply half of the amount that they were producing without international trade. Find the per unit subsidy and illustrate it graphically. (3 marks)

$Q = 10 \; 12 = 5$



$P = 15 + 2Qs \rightarrow$ supply

$P = X + 2Qs \quad X = 10$

$20 = X + 2(5)$

$P = 10 + 2Qs$

$15 - 10 = \$5$ per unit

(v) Compute the quantity supplied by international suppliers after the subsidy. (2 marks)

25 - 5 = 20 units international supply

(vi) Calculate the DWL after the subsidy. Compare it to the answer obtained in part (iii). Even though the quantity supplied by domestic producers is not the same as before the international trade, which option out of two (no trade or free trade with subsidy) is more preferable? (4 marks)

Question #4 (19 marks) Suppose that Jess and her neighbour Chris both take care of farm animals in their backyard. In a 30-day month, Jess can fully raise either 150 chickens and 0 pigs or 0 chickens and 50 pigs or any combination lying on the line between these two points. In the same time, Chris can raise either 80 chickens and 0 pigs or 0 chickens and 20 pigs or any combination lying on the line between the two points.

i. No trade: Assume that Jess and Chris both spend half of their time to raise their chickens and the other half to raise pigs. How many of each will they have at the end of the month? (2 marks)

ii. Draw two separate graphs for their PPF's (Chickens on vertical axis, Pigs on horizontal axis) (4 marks)

iii. If they decide to start trading with one another, what should they specialize in? Explain. (3 marks)

iv. Suppose Jess and Chris both decide to focus on their specialization and that they decide to trade 30 chickens for 10 pigs with each other, calculate their new consumption bundles. (3 marks)

v. Following from (iv): Show that given Jess's and Chris's production quantities of chickens, they could not have produced the corresponding quantities of pigs you have found in (iv) in absence of trade. (4 marks)

vi. Who has an absolute advantage in this case? Who has a comparative advantage and for what farm animal? (3 marks)

		gas		oil	gas	oil	gas	oil
Q8	Canada	750 000	OR	300 000	(1) : 0.4		2.5 : 1	
	US	600 000	OR	480 000	1 : 0.8		1.25 : (1)	

Q11				Nominal Price Index	Real Price Index
	2001	94	14	$(14/15) \cdot 100 = 93.33$	$(93.33/94) \cdot 100 = 99.29$
	2002	100	15	$(15/15) \cdot 100 = 100$	$(100/100) \cdot 100 = 100$
	2003	105	16	$(16/15) \cdot 100 = 106.67$	$(106.67/105) \cdot 100 = 101.59$
	2004	115	17	$(17/15) \cdot 100 = 113.33$	$(113.33/115) \cdot 100 = 98.55$

↑ Expressed in historical monetary terms

↑ Adjusted value from Nominal value to remove effects of general price level changes over time

Q12
2001 $[(93.33/94)-1] \cdot 100 = -0.71\%$ cheaper
2002 Base Year
2003 $[(106.67/105)-1] \cdot 100 = 1.59\%$ expensive
2004 $[(113.33/115)-1] \cdot 100 = -1.45\%$ cheaper

Q22 $2000 to invest

Pear → +7% return → 30% prob.
−4% return → 70% prob.

Sun → +9% return → 25% prob
−5% return → 75% prob

Expected Yield

Pear
$2000 \times 1.07 \times .30 = +642$
$2000 \times 0.96 \times .70 = +1344$ } $1986

Sun
$2000 \times 1.09 \times .25 = +545$
$2000 \times 0.95 \times .75 = +1425$ } $1970

OR.

Expected Value

Pear
$0.07 \times 0.30 = +0.021$
$-0.04 \times 0.70 = -0.028$ } -0.007

Sun
$0.09 \times 0.25 = +0.0225$
$-0.05 \times 0.75 = -0.0375$ } -0.015

Q23 $\text{Variance} = \sum_i p_i (x_i - M)^2$

Pear = $0.30(0.07 + 0.007)^2 + 0.70(-0.04 + 0.007)^2$

$0.0017787 + 0.0007623$

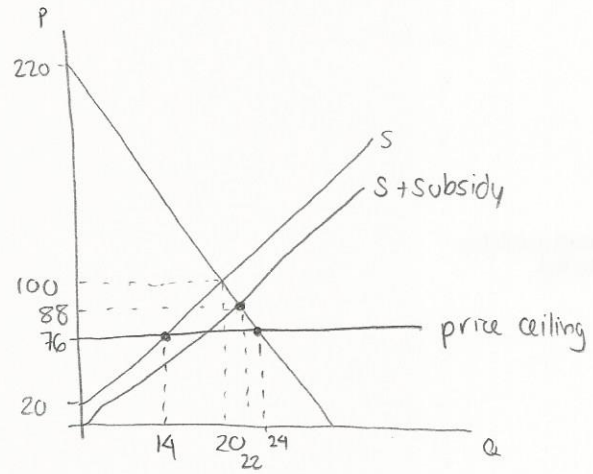
Pear Variance = $0.002541 \times 100 =$

Sun = $0.25(0.09 + 0.015)^2 + 0.75(-0.05 + 0.015)^2$

$0.00275625 + 0.00091875$

Sun Variance = $0.003675 \times 100 =$

Q24 D: $P = 220 - 6Q$ S: $P = 20 + 4Q$



$220 - 6Q = 20 + 4Q$

$\frac{200}{10} = \frac{10Q}{10}$ $Q = 20$

Q25 $P = 20 + 4Q$ $(-20) \rightarrow P = 0 + 4Q$

$220 - 6Q = 4Q \rightarrow \frac{220}{10} = \frac{10Q}{10}$ $Q = 22$

$4(22) = 88$

$P = 88$

Q27 CS = $220 - 88 = 132$

$\frac{132 \times 22}{2} = 1452$

Q28 PS = $\frac{88 \times 22}{2} = 968$

Q30 $P = 76$

$76 = 220 - 6Q$

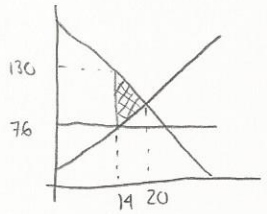
$\frac{-144}{-6} = \frac{-6Q}{-6}$ $Q = 24$

$P = 76$

$76 = 20 + 4Q$

$\frac{56}{4} = \frac{4Q}{4}$ $Q = 14$

Q31



$130 - 76 = 54$

$\frac{54 \times 6}{2} = 168$

Q38 Substitution

$$Q_1 = \frac{250 - Q_2 + 50}{5} \qquad Q_2 = \frac{350 - Q_1 + 75}{5}$$

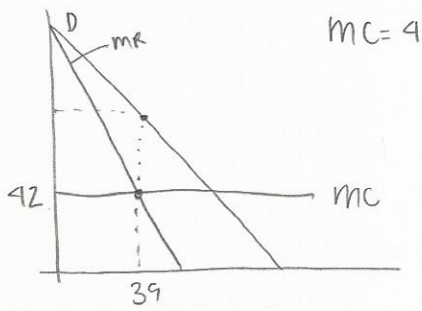
$$Q_1 = \frac{250 - \left(\frac{350 - Q_1 + 75}{5}\right) + 50}{5} \qquad (70 - 0.2Q_1 + 15)$$

$$\frac{250 - 70 + 0.2Q_1 - 15 + 50}{5} \rightarrow 50 - 14 + 0.04Q_1 - 3 + 10$$

$$\frac{43}{.96} = \frac{0.96Q_1}{.96} \qquad Q_1 = 44.79$$

$$Q_2 = \frac{350 - 44.79 + 75}{5} = 76.042$$

Q39



$MC = 42$

$42 = 120 - 2Q$

$-78 = -2Q$

-2

$Q = 39.$

$D: 120 - Q$

$120 - 39 = 81$

$P = 81$

Revenue = $39 \times 81 = 3159$

cost = $39 \times 42 = 1638$

1521