Economics 101
Spring 2000
Section 4 - Hallam
Quiz 7

1. The production function gives
   a. All output levels attainable for a given level of input
   b. The change in output that can be obtained from one more dollar of expenditure
   c. The change in output that results from one more unit of an input
   d. The maximum output attainable for a given combination of inputs
   e. The level of output divided by the level of input

2. What is the elasticity of demand (mid-point formula) for a demand curve given by $Q^D = 400 - 2P$ as price goes from \$90 to \$100?
   a. -11/9
   b. -19/21
   c. -21/19
   d. -0.85
   e. -9/13

The following data is for problems 3 and 4 where Y denotes output, FC denotes fixed cost, VC denotes variable cost, AFC is average fixed cost, AVC is average variable cost, ATC is average total cost, and MC is the discrete marginal cost of going from the previous level of Y to the current one.

Y	FC	VC	COST	AFC	AVC	ATC	MC
0.00	400.00	0.00		–	–	–	–
1.00	400.00	90.00		400.00			
2.00	400.00	164.00		200.00			
3.00	400.00	228.00					
4.00	400.00	288.00					
5.00	400.00	350.00	750.00		70.00		
6.00	400.00	420.00	820.00		70.00		
7.00	400.00	504.00					84.00
8.00	400.00	608.00					
9.00	400.00	738.00					
10.00	400.00	900.00		40.00		130.00	
11.00	400.00	1100.00	1500.00	36.36			
12.00	400.00	1344.00					

3. What is average total cost when Y = 8?
   a. 84
   b. 126
   c. 76
   d. 50
   e. 129.14

4. What is marginal cost when Y = 6?
   a. 62
   b. 126
   c. 76
   d. 126
   e. 70

For question 5, use the diagrams on the next page. In all cases the initial situation is at S_0 and D_0 in the market for the good in question.

5. Which panel best represents the effect of an increase in price of an input used by the firm?
   a. A
   b. B
   c. C
   d. D

6. Which of the following statements is correct?
   a. Average variable costs are always decreasing
   b. Average fixed costs (AFC) are always decreasing
   c. Total costs (TC) are always greater than or equal to total variable costs (TVC)
   d. Both b and c are correct
   e. Average fixed costs (AFC) are always increasing

7. For a firm to minimize cost, which of the following are true?
   a. the slope of the isocost line and the slope of the isoquant curve are be equal
   b. $\frac{-w_1}{w_2} = \frac{-MPP_{x_1}}{MPP_{x_2}}$
   c. $\frac{-w_2}{w_1} = MRS_{x_1x_2} = \frac{\Delta x_1}{\Delta x_2}$
   d. both a and b
   e. a, b, and c

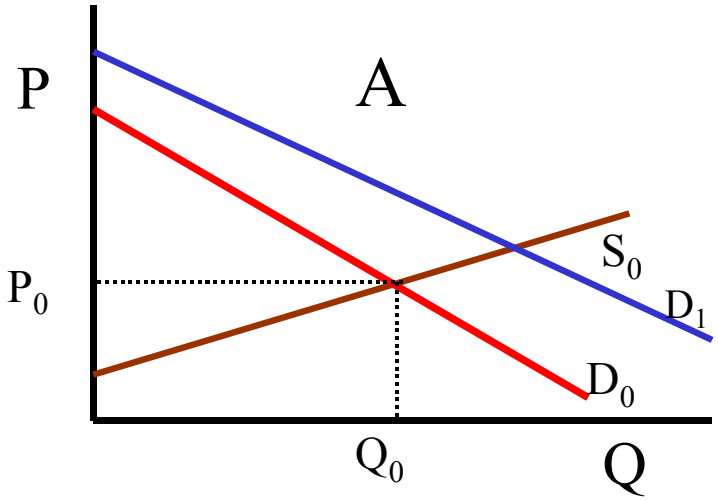
8. Consider the following production function

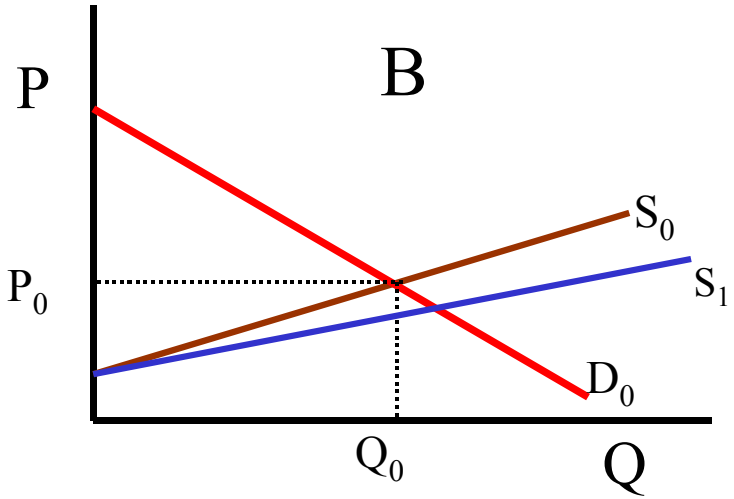
$$y = 14x_1 + 20x_2 - 0.5x_1^2 - x_2^2$$

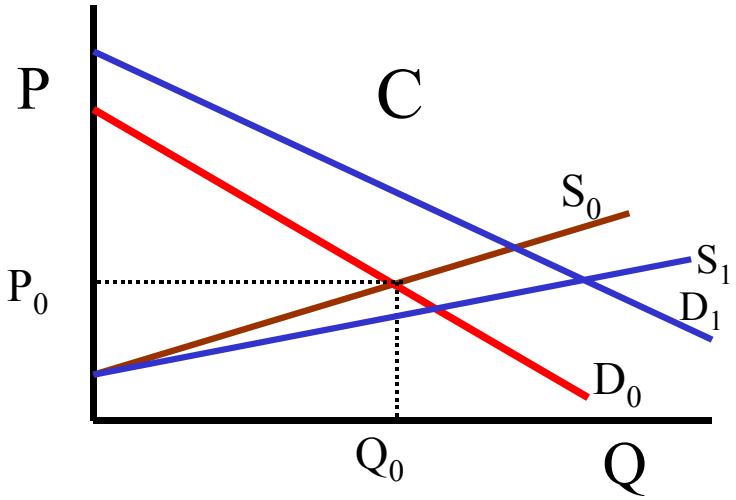
The price of x_1 is \$10 and the price of x_2 is \$5. You are trying to which of the following sets of points is the cost minimizing way to produce 117 units of output. Which of the following points is the minimum cost way to produce 117 units of output? (Be very careful on this problem!)

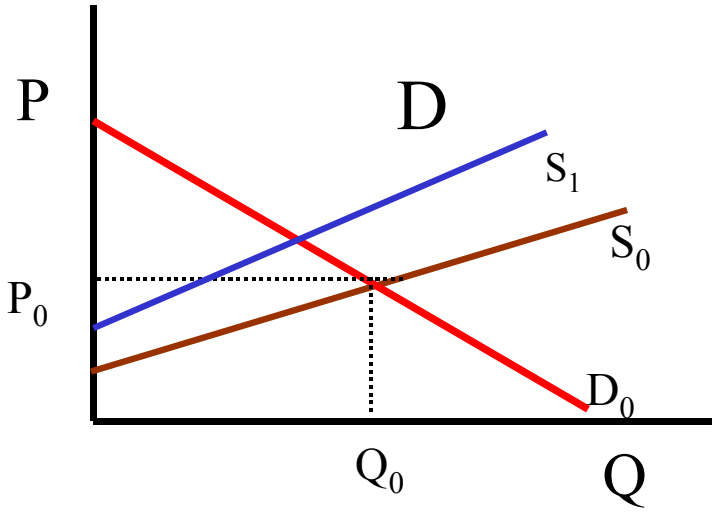
x_1	x_2	MPP_1	MPP_2
14.000	1.000	0.000	18.000
8.169	2.000	5.831	16.000
6.000	3.000	8.000	4.000
4.213	4.000	6.000	12.000
3.417	5.000	10.583	10.000
2.256	6.000	11.744	8.000
2.000	7.000	12.000	6.000
1.500	8.000	12.500	4.000
1.351	9.000	12.649	2.000

   a. $x_1 = 8.169$, $x_2 = 2.000$
   b. $x_1 = 6.000$, $x_2 = 3.000$
   c. $x_1 = 3.417$, $x_2 = 5.000$
   d. $x_1 = 2.000$, $x_2 = 7.000$
   e. $x_1 = 1.500$, $x_2 = 8.000$


P
A
S_0
P_0
D_1
D_0
Q_0
Q


P
B
S_0
P_0
S_1
D_0
Q_0
Q


P
C
S_0
S_1
P_0
D_1
D_0
Q_0
Q

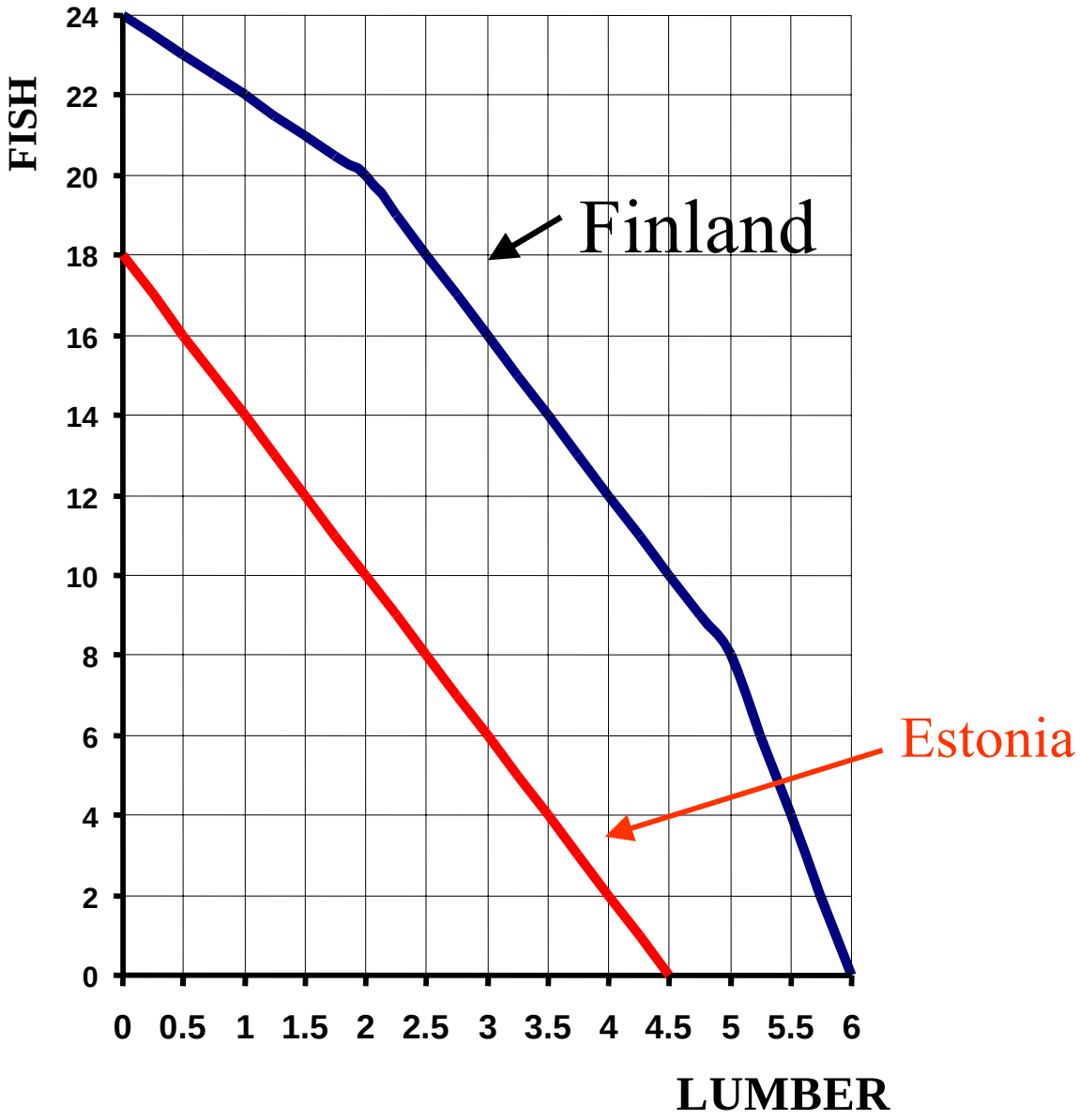

P
D
S_1
S_0
P_0
D_0
Q_0
Q

The diagram on the next page is for use with questions 9 and 10. The two countries are Finland and Estonia. The data is output per day in each country. The two products are lumber and fish.

9. When each country is producing less than 2 units of lumber, which of the following is true?
   a. The opportunity cost of lumber within Finland is 2 fish
   b. The opportunity cost of lumber within Estonia is 4 fish
   c. Neither country has a comparative advantage in either product
   d. Finland has a comparative advantage in fish
   e. Both a and b are true

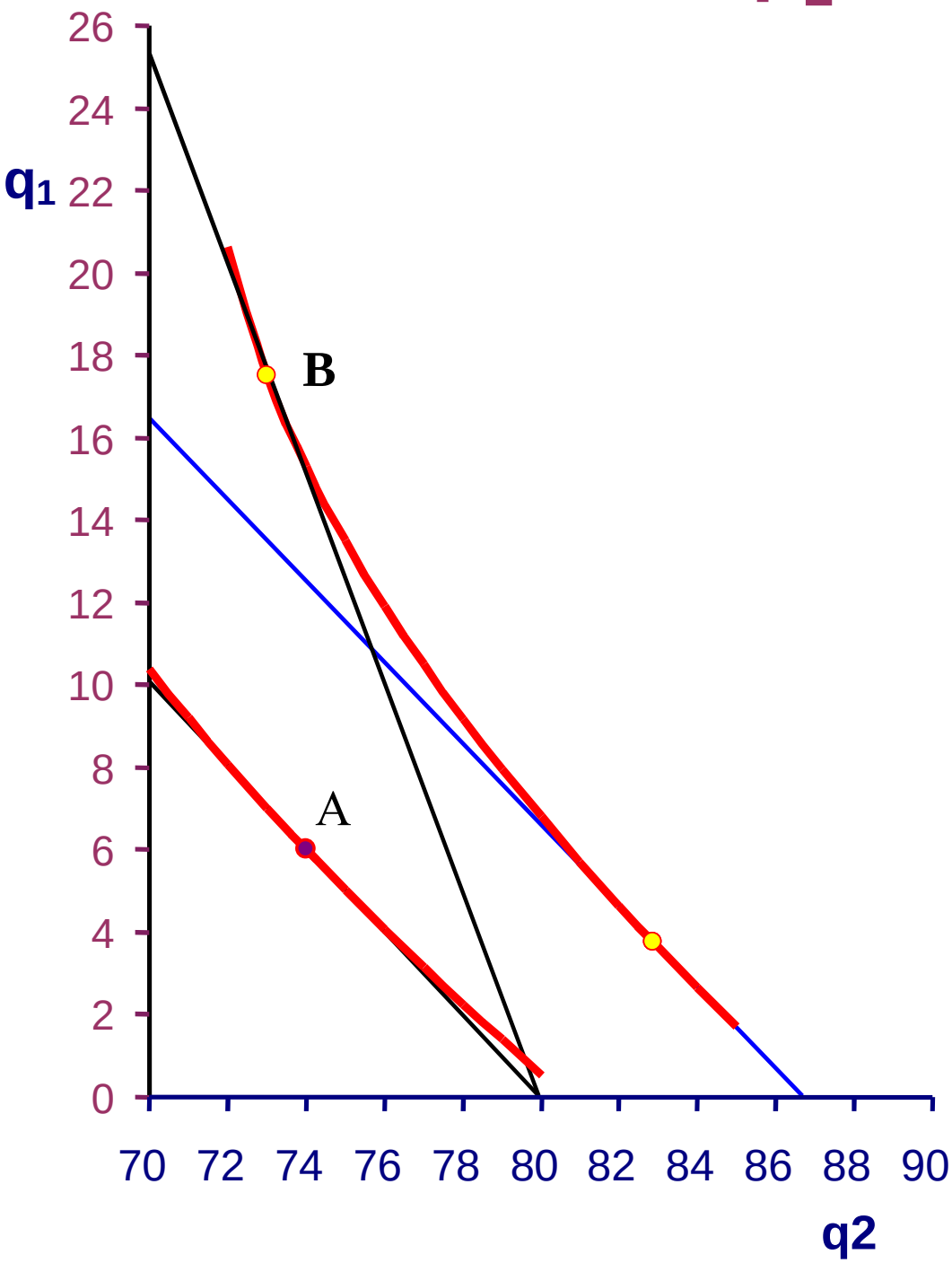
10. When each country is producing between 2 and 4 units of lumber which of the following statements is true?
   a. The opportunity cost of lumber within Estonia is 4 fish
   b. The opportunity cost of lumber within Finland is 4 fish
   c. Neither country has a comparative advantage in either product
   d. Finland has a comparative advantage in fish
   e. a, b, and c are correct

Production Possibility Set
LUMBER and FISH



11. On the graph on the next page, there is an decrease in the price of good 1. The initial situation is $p_1 = 1$, $p_2 = 1$, and income = 80. The initial equilibrium is at point A. Then the price of p_1 falls to 0.40. The consumer buys more of good one as its price falls. The new equilibrium is at point B. Substitution and income effects are evaluated at the new utility level. Which of the following statements is true?
    a. The income effect is the movement from point A to point B
    b. The substitution effect is from point B to the point on the same indifference curve where a budget line with the initial prices but higher income is tangent.
    c. The substitution effect is from point A to the point on the same indifference curve where a budget line with the subsequent prices but lower income is tangent.
    d. Good one is an inferior good
    e. Both b and d are correct.

Decrease in p_1



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Answer Key

Question	Correct Answer
1	d
2	b
3	b
4	e
5	d
6	d
7	e
8	d
9	e
10	e
11	e