

2.

East Lake		West Lake	
# of Boats	Average # Fish	# of Boats	Average # of Fish
1	40	1	50
2	39	2	46
3	38	3	42
4	37	4	38
5	36	5	34

- a. Using the above chart, suppose Madison has 5 fishing boats. What is the optimal method of allocating 5 fishing boats between these two lakes? [No credit given if you don't show your work] (6.5 points)
- b. Based on your answer from (a), how many fish will be caught from the East Lake? (2 points)
- c. Based on your answer from (a), how many fish will be caught from the West Lake? (2 points)
- d. How many total fish are caught? Show your work. (2 point)

4. Complete the following table for the short-run cost curves for the production function: $Q = 2KL$ where in the short-run K is fixed at 2 units, with the rental price of capital = \$2 and the wage rate = \$2. (1.5 points per column)

Workers	Output	TC	VC	FC	ATC	AVC	AFC	MC
0					--	--	--	--
1								
2								

*Extra Credit Eligibility – You must meet these two criteria to answer extra credit questions.

- Please skip these extra credit questions if your cell phone rang in class since the 1st test
- Please skip these extra credit questions if you are not taking this test during the normally scheduled time in class (Thu. March 22nd at 11am)

Extra Credit (+2): In plain English (I don't want a mathematical definition) tell me what is marginal cost?

Extra Credit (+2): In words tell me what does the equation MP_L/w mean? (MP_L is marginal product of labor & w is wage)

II. Multiple Choice: (20 questions, worth 2.5 points each...50 points total)

Use the following table to answer the next two questions:

Labor	Output	Marginal Product	Average Product
0	0	--	--
1		10	
2	30		
3			20
4	80		
5		15	

- What is the marginal product from the 3rd worker?
 - 10
 - 20
 - 30
 - 40
 - 50

- Do diminishing returns to labor appear in the above chart? If so, where does this occur?
 - Yes, after the 1st worker is hired
 - Yes, after the 2nd worker is hired
 - Yes, after the 3rd worker is hired
 - Yes, after the 4th worker is hired
 - No (diminishing returns are not exhibited in the above graph).

Use the table below to answer the next three questions:

Q	Fixed Cost	Variable Cost	Total Cost	Marginal Cost	Average Fixed Cost	Average Variable Cost	Average Total Cost
0				--	--	--	--
1		50					
2				28			
3	50					32.67	
4			162				

- What is the marginal cost of producing the fourth quantity?
 - 20
 - 8
 - 15
 - 12
 - 14

- What is the average variable cost of making the second quantity?
 - 39
 - 33.33
 - 28
 - 25
 - 64

- What is the total cost when quantity equals 0?
 - 0
 - 25
 - 12
 - 20
 - 50

6. If your income increases by 10% while your spending on the good increases by a larger proportion (say 14%), then economists call this type of good a(n):
- A) Giffen good
 - B) inferior good
 - C) Engel good
 - D) luxury good
 - E) necessary good
7. What would you expect the sign of the cross-price elasticity of demand to be between peanut butter and jelly?
- A) positive
 - B) negative
 - C) zero
8. The defining attribute of a natural monopoly is:
- A) a declining fixed cost curve
 - B) an increasing marginal cost curve
 - C) a declining marginal revenue curve
 - D) a declining long-run average cost curve
9. Find the returns to scale for the following function: $Q = 2K + 4L$
- A) increasing returns to scale
 - B) decreasing returns to scale
 - C) constant returns to scale
10. What is an isoquant?
- A) various input combinations that yield the same output.
 - B) how easily can capital can be substituted for labor.
 - C) various input combinations that cost the same.
 - D) various combinations of goods that yield the same utility
 - E) the change in capital divided by the change in labor

Use the following information to answer the next two questions: Summit Lawn can hire workers to cut grass at \$50 per day and can a unit of capital (lawn mowers) for \$20 per day. Currently Summit Lawn spends \$200 per day.

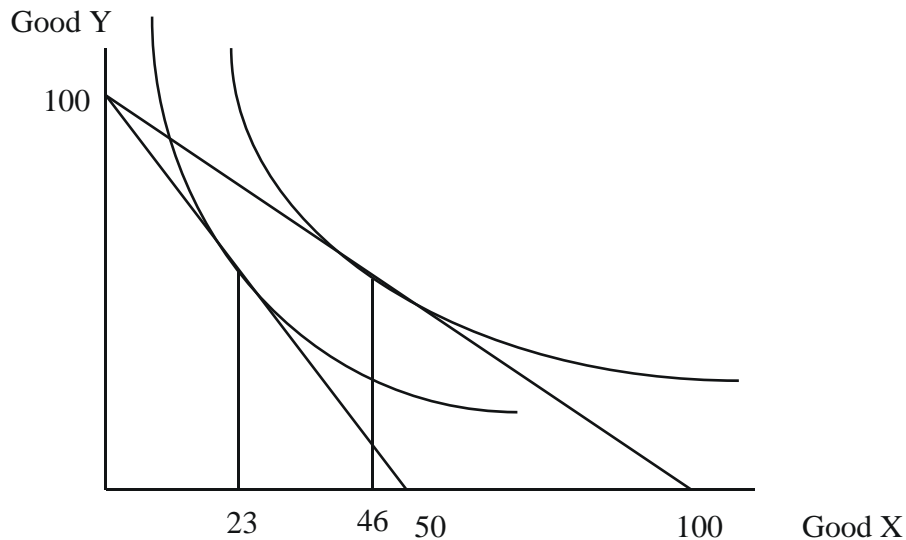
K

_____ L

11. In the space above, draw an isocost curve for Summit Lawn spending \$200. What is the slope of this isocost curve?
- A) $-1/10$
 - B) $-2/5$
 - C) $-5/2$
 - D) -2
 - E) -4

12. At a wage of \$50 per day to hire workers and rental prices of \$20 per day for capital (lawn mowers), Summit Lawn is currently hiring 4 workers and renting 3 machines. The marginal product of workers = 20 and the marginal product of machines=10. Given this information, what recommendation would you give Summit Lawn?
- Rent more machines and fire workers.
 - Rent fewer machines and hire workers.
 - Don't change anything, since Summit Lawn is already optimally using its inputs.

Use the graph below to answer questions 13-16.



13. If $M = \$100$, $P_Y = \$1$, and $P_X = \$2$. Find the best affordable bundle.
- A
 - B
 - C
 - D
 - E
14. Suppose the price of X decreases from $P_X = \$2$ to $P_X = \$1$. Everything else is unchanged ($M = \$100$ & $P_Y = \$1$). The total effect is represented by moving from point ____ to point ____.
- A to B
 - D to A
 - D to B
 - C to D
 - B to D
15. The substitution effect due to the price of X decreasing is represented as moving from point ____ to point ____.
- B to A
 - D to A
 - A to B
 - A to C
 - C to D
16. The income effect due to the price of X decreasing is represented as moving from point ____ to point ____.
- D to A
 - C to B
 - B to C
 - D to B
 - A to B

17. If Jerry and Ben's demand curves are: $P = 12 - 4Q_J$ and $P = 12 - 2Q_B$, respectively. Find the market demand curve.

- A) $P = 12 - (1/3)Q$
- B) $P = 24 - (1/6)Q$
- C) $P = 12 - (4/3)Q$
- D) $P = 9 - (2/3)Q$
- E) $P = 12 - (3/4)Q$

18. If demand is $P = 13 - 2Q$, find the price elasticity of demand if $P = 3$.

- A) $-3/10$
- B) $-3/5$
- C) $-6/5$
- D) $-5/6$
- E) $-10/3$

19. How do you interpret a price elasticity of supply of 1.2?

- A. If prices rise by \$1, then quantity supplied increases by 1.2 units
- B. If prices rise by \$1, then quantity supplied increases by 1.2%
- C. If prices fall by 1%, then quantity supplied increases by 1.2%
- D. If prices fall by 1%, then quantity supplied falls by 1.2%
- E. If prices rise by 1%, then quantity supplied increases by 12%

20. Which of the figures below indicate a production function that has increasing returns to scale?

- A) Figure 1
- B) Figure 2
- C) Figure 3

