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Economics & Society
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Homework 4 – KEY

Average: 77.14 + 0pts GI bonus

Due on 12/9/2023, by 23:00

This assignment is optional but STRONGLY RECOMMENDED. If you do not submit the answers till the deadline, the score of your final exam will substitute for the score for this assignment. Submit only the correct letter for each task on eLearn under 'Quizzes' within 'COR2100-Economics and Society G7-8-26-49'. Note that the actual text of questions and answers is not supposed to appear on the eLearn quiz. You have unlimited attempts. The system is programmed to credit your last attempt. Be informed that if you submit an attempt and afterwards you re-open the quiz, you must submit your answers AGAIN. Otherwise, the system will grade the unfinished attempt with 0 (because it is the last one) and there is NOTHING I can do to fix this after the fact. Late homework or homework submitted outside eLearn cannot be accepted as this would violate SMU official policy for fairness and transparency in grading. This assignment is protected by Grade Insurance™: If the assignment's average turns out to be below 75, an equal amount of bonus points will be given to every work, for the average to become 75. Direct any homework questions to your TA.

***Scenario 4.1**: Consider the market demand for cameras is $p = 900 - 5q$ and the marginal cost of production is $MC = 5q$.*

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1. According to scenario 4.1, how much is the VC for producing 5 cameras?

18% A. Around $15.
B. Around $50.
64% **C. Around $75.**
13% D. Around $100.

[The VC for 5 cameras is 5+10+15+20+25=$75]

2. According to scenario 4.1, how much is the AVC of the first 5 cameras?

18% A. Around $5.
B. Around $10.
62% **C. Around $15.**
D. Around $20.
13% E. Around $25.

[The AVC of the first 5 cameras is 75/5=$15]

3. ✓ According to scenario 4.1, what is the PC quantity for maximizing profit?

A. Around 30 cameras.
B. Around 60 cameras.
98% **C. Around 90 cameras.**
D. Around 120 cameras.
E. Around 150 cameras.

[In PC, $p = MC$. So, $900 - 5q = 5q$ or $10q = 900$ or $q = 90$ cameras]

4. ✓ According to scenario 4.1, what is the PC price?

A. Around $50.
B. Around $150.
C. Around $300.
97% **D. Around $450.**
E. Around $600.

[From the demand, $p = 900 - 5 \cdot 90$ or $p = \$450$]

5. ✓ According to scenario 4.1, what is the monopolistic quantity?

A. Around 30 cameras.
98% **B. Around 60 cameras.**
C. Around 90 cameras.
D. Around 120 cameras.
E. Around 150 cameras.

[In monopoly, $MR = MC$. So, $900 - 10q = 5q$ or $15q = 900$ or $q = 60$ cameras]

6. ✓ According to scenario 4.1, what is the monopolistic price?

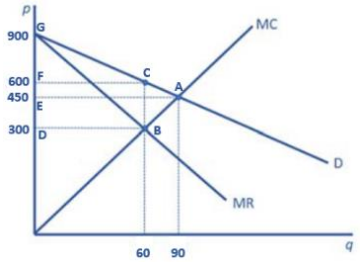
A. Around $50.
B. Around $150.
C. Around $300.
D. Around $450.
95% **E. Around $600.**

[From the previous question, $p = 900 - 5 \cdot 60$ or $p = \$600$]

7. ✓ According to scenario 4.1, how much is the consumer surplus if the market is a monopoly?

A. Zero.
B. Around 3,000.
C. Around 6,000.
92% **D. Around 9,000.**
E. Around 12,000.
F. Around 15,000.

[It will be triangle CFG. The height of the triangle is 60 and base is 900-600=300. Thus, the area is 60·300·0.5=9,000]



8. According to scenario 4.1, how much is the DWL if the market is a monopoly?

A. Zero.
B. Around 1,500.
C. Around 3,000.
79% **D. Around 4,500.**
E. Around 6,000.
F. Around 7,500.

[It will be triangle ABC. The height of the triangle is 90-60=30 and the base is 600-300=300. Thus, the area is 30·300·0.5=4,500]

9. According to scenario 4.1, how much will the monopolist's profit be, if FC = 12,000?

A. Around $3,000.
26% B. Around $6,000.
C. Around $9,000.
D. Around $12,000.
52% **E. Around $15,000.**
13% F. Around $18,000.

[Revenue is $60 \cdot 600 = \$36{,}000$*. Cost is* $12{,}000 + [5 + 10 + 15 + \cdots + 300] = 12{,}000 + 30 \cdot 305 = \$21{,}150$*. Thus, the profit is* $36{,}000 - 21{,}150 = \$14{,}850$*]*

10. According to scenario 4.1, how much more profit does the monopolist earn compared to the market being perfectly competitive, if FC = 12,000?

A. Around $3,000.
20% B. Around $5,000.
53% **C. Around $7,000.**
D. Around $9,000.
E. Around $12,000.
10% F. Around $15,000.

[In PC, revenue is $90 \cdot 450 = \$40{,}500$*. Cost is* $12{,}000 + [5 + 10 + 15 + \cdots + 450] = 12{,}000 + 45 \cdot 455 = \$32{,}475$*. Thus, the profit is* $40{,}500 - 32{,}475 = \$8{,}025$*, thus monopoly makes more* $14{,}850 - 8{,}025 = \$6{,}825$*]*

11. Which of the following is accurate regarding monopolies?

A. A monopolist will always make positive profits. *[It is possible for a monopolist to have losses due to high cost]*
32% **B. Monopolistic markets generally have lower gains of trade than PC markets.** *[PC is the only market structure that is able to capture all gains of trade]*
C. Both A and B.
54% D. None of the above.

Scenario 4.2: The table below shows the quantity, total revenue and variable cost of a monopolist. Fixed cost is $20.

Quantity	*1*	*2*	*3*	*4*	*5*	*6*
Total Revenue	*120*	*200*	*270*	*330*	*370*	*400*
Variable Cost	*50*	*80*	*120*	*180*	*260*	*360*

12. According to scenario 4.2, how many units will the monopolist produce?

A. 1 unit.
B. 2 units.
12% C. 3 units.
83% **D. 4 units.**
E. 5 units.
F. 6 units.

[From the table below, we can see that $MR = MC$ at $q = 4$, where $MR = MC = \$60$

q	*0*	*1*	*2*	*3*	***4***	*5*	*6*
R	*0*	*120*	*200*	*270*	*330*	*370*	*400*
MR	*-*	*120*	*80*	*70*	***60***	*40*	*30*
VC	*0*	*50*	*80*	*120*	*180*	*260*	*360*
C	*20*	*70*	*100*	*140*	*200*	*280*	*380*
MC	*-*	*50*	*30*	*40*	***60***	*80*	*100*

13. According to scenario 4.2, how much will the monopolist charge?

A. Around $50.
68% **B. Around $75.**
21% C. Around $100.
D. Around $125.
E. Around $150.

[Since the quantity is 4 units and total revenue is $330, the price must be $82.5 per unit]

q	0	1	2	3	4	5	6	7
p	80	68	57	48	40	34	29	25

***Table 4.1**: The demand schedule for a monopolist*

14. According to table 4.1, what is the profit maximizing quantity for the monopolist if the total cost is $C = 5q$?

A. Zero.
B. 1 unit.
C. 2 units.
D. 3 units.
E. 4 units.
65% **F. 5 units.**
14% G. 6 units.
H. 7 units.

[From the table below, we can see that the monopolist maximizes their profit at the 5th unit

q	0	1	2	3	4	**5**	6	7
p	80	68	57	48	40	34	29	25
R	0	68	114	144	160	**170**	174	175
MR	-	68	46	30	16	10	4	1
C	0	5	10	15	20	**25**	30	35
MC	-	5	5	5	5	5	5	5
Π	0	63	104	129	140	**145**	144	140

15. ✓ According to table 4.1, how much will the monopolist's profit be if the total cost is $C = 5q$?

A. Around \$50.
B. Around \$75.
C. Around \$100.
D. Around \$125.
84% **E. Around \$150.**

[For the quantity $q = 5$ units, the revenue will be $R = 5 \cdot 34$ or $R = \$170$ and total cost will be $C = 5 \cdot 5$ or $C = \$25$ Thus, profit will be $\Pi = R - C$ or $\Pi = 170 - 25$ or $\Pi = \$145$]

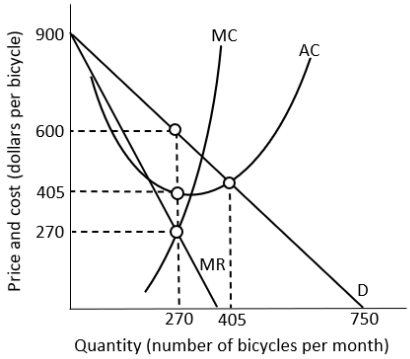


***Figure 4.1**: the demand and cost curves for a monopolist, who produces bicycles*

16. ✓ According to figure 4.1, how many bicycles will the monopolist produce in a month?

A. Less than 270 bicycles.
95% **B. 270 bicycles.**
C. Between 270 and 405 bicycles.
D. 405 bicycles.
E. Above 405 bicycles.

[The monopolist produces until $MR = MC$. From the figure, this happens when $q = 270$ bicycles]

17. ✓ According to figure 4.1, how much will the monopolist charge per bicycle?

A. Less than $270.
B. $270.
C. Between $270 and $405.
D. $405.
E. Between $405 and $600.
93% **F. $600.**
G. Above $600.

[The monopolist will produce $q = 270$ bicycles, so from the demand curve we can see that the corresponding price is $600]

18. ✓ According to figure 4.1, how much will the monopolist's monthly profit be?

A. Around $10,000.
B. Around $20,000.
C. Around $30,000.
D. Around $40,000.
94% **E. Around $50,000.**

[Monthly revenue is $270 \cdot 600 = \$162{,}000$. From the AC figure we can see that the monthly cost per bicycle will be $405, so the total monthly cost will be is $270 \cdot 405 = \$109{,}350$. Thus, the profit per month for the monopolist will be $162{,}000 - 109{,}350 = \$52{,}650$]

19. Which of the following is accurate for a sales tax on a perfectly competitive product?

A. It will move the supply curve of the product to the right.

89% **B. It will move the supply curve of the product to the left.**

C. It will move the demand curve of the product to the right.

D. It will move the demand curve of the product to the left.

[A sales tax has the same effect on the supply curve as any other cost per unit for the product because the seller has to pay the tax to the state]

20. Which of the following is rent-seeking?

13% A. The high price a monopoly charges. *[High monopoly prices result from high market power, not rent seeking]*

39% B. The high advertising costs for the public to become aware for a new product. *[Customer awareness is a natural cost of new products]*

C. The large scale of production industrial companies use. *[Large scale of production is cost efficient for industrial producers]*

40% **D. None of the above.**

[Rent seeking refers to resources spent to deter the competition in an unfair way]