

Homework 3 – KEY

Average: 84.67 + Opts GI bonus

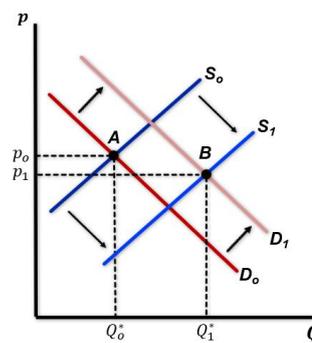
Due on 3/2/2026, by 23:00

The tasks in this assignment were designed for the average student to solve independently after mastering the material. The answers provided here are written in an instructional manner to help you understand the problem-solving process for each task. If you continue to struggle with a task after reviewing this key, the difficulty may stem not from the task itself, but from having missed or overlooked some parts of the required material.

1. ✓ Which of the following is likely to happen, if both the demand and supply curves for good A shift to the right?

- 86%A. The equilibrium quantity of good A will increase.
 B. The equilibrium quantity of good A will decrease.
 C. The equilibrium quantity of good A will remain the same.
 13%D. All of the above are possible.

[As we can see in the diagram below, an increase in both the demand and supply leads to a higher equilibrium quantity, while the final effect on price depends on whether the shift in demand is larger or smaller than the shift in supply:]



2. ✓ Which of the following is most likely to be a characteristic of a Perfectly Competitive market?

- A. Buyers can influence the market price, while sellers cannot. *[Neither buyers, nor sellers can influence the price in PC markets]*
 B. Large firms can sell their products at a higher price. *[Firms which set their price above the market price have zero sales]*
 C. Small firms can sell their products at a higher price. *[Same as above]*
 99%D. Firms have no influence on price. *[PC assumes that each firm holds a tiny market share which makes it practically impossible for them to influence the market price]*

3. ✓ Which of the following is most likely to be a sunk cost for a company?

- 97%A. Employee training. *[If an employee leaves their job, the firm will not be able to recover the cost of training them]*
 B. Furniture. *[It can be resold as used]*
 C. Utility bills. *[It is a variable cost]*
 D. Raw materials. *[It is also a variable cost and, if raw material inventory exists, it can also be resold]*

- 4✓ In a Perfectly Competitive market, firms are currently earning positive economic profits. Which of the following is most likely to happen in the long-run?
- A. The market demand will decrease.
 - B. The market demand will increase
 - C. The market supply will decrease.

37%D. **The market supply will increase.**

[Profits will attract new firms who will enter the market, ultimately increasing the total quantity supplied]

q	MC	VC
1	30	30
2	26	56
3	20	76
4	24	100
5	30	130
6	42	172
7	53	225

Table 3.1: quantity (q), MC and VC for a Perfectly Competitive firm.

- 5✓ Refer to table 3.1. If the market price is \$24, which of the following is most likely for this Perfectly Competitive firm, given that cost conditions do not change?

A. To keep operating indefinitely.

78%B. **To exit the market immediately.**

14%C. To exit the market in the long-run.

D. We need information about the fixed cost to tell.

[At the price of \$24, the firm will produce 4 units and its average variable cost will be $AVC = 100/4$ or $AVC = 25$. Since the price is below its AVC , the firm will shut-down immediately]

- 6✓ Refer to table 3.1. If the fixed cost of the firm is \$20 and the market price is \$42, which of the following is most likely for this firm, given that cost conditions do not change?

85%A. **To keep operating indefinitely.**

B. To exit the market in the short-run.

C. To exit the market in the long-run.

D. To exit the market in the short-run and re-enter in the long-run.

[At the price of \$42, the firm will produce 6 units. At this level, firm's average variable cost will be $AVC = 172/6$ or $AVC = 28.67$, its total cost will be $C = VC + FC$ or $C = 172 + 20$ or $C = 192$ and average total cost $AC = 192/6$ or $AC = 32$. Thus, at the price of \$42 the firm will cover both its AVC and AC , so it will keep operating as long as these cost conditions hold]

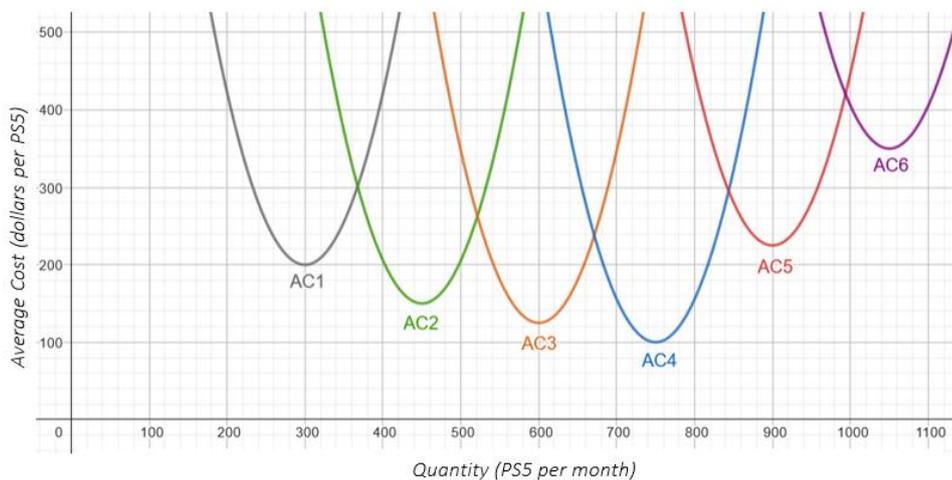


Figure 3.1: The S-R average cost curves for 6 different scales of production for Sony's production plants.

7✓ According to figure 3.1, up to which level of production does Sony enjoy Economies of Scale?

- A. Around 300 PS5.
- B. Around 450 PS5.
- C. Around 600 PS5.
- 31%**D. Around 750 PS5.**
- E. Around 900 PS5.

[Economies and Dis-economies are relevant to the L-R AC (LAC), which is traced by the S-R AC minimums. Until 750 PS5, LAC decreases, which means that the firm faces Economies of Scale]

8. Suppose that Sony is committed to scale AC1 in figure 3.1 and later turns out that the monthly quantity demanded is 400 PS5. Which of the following is true?

- A. The firm will experience Constant Returns to Scale.
- 10%B. The firm will experience Increasing Returns to Scale.
- 74%**C. The firm will experience Diminishing Returns to Scale.**
- 15%D. None of the above.

[400 consoles are at the increasing segment of AC1]

9✓ According to figure 3.1, which of the following could explain the LAC between 300 and 600 PS5 per month?

- A. Sony can buy large quantities of semiconductors at a discount price.
- B. Sony can hire specialized workers around the world.
- 93%**C. Both A and B.**
- D. None of the above.

[At this level of production Sony faces Economies of Scale. By buying large quantities of some raw materials at a lower price or hiring specialized workers, Sony could indeed decrease its LAC]

10.* A firm can produce the same quantity of output using 4 alternative combinations of capital (K) and labor (L): (i) 120K and 40L; (ii) 100K and 60L; (iii) 70K and 50L; (iv) 50K and 70L. Which of the following is accurate?

- A. Combination (i) is economically less efficient than (ii). *[We cannot tell because (ii) uses less K but more L than (i)]*
- 48%**B. Combination (ii) is economically less efficient than (iii).** *[Because (iii) can produce the same with less of both K and L]*
- C. Combination (iii) is economically less efficient than (iv). *[We cannot tell because (iv) uses less K but more L than (iii)]*
- 49%D. None of the above is accurate.