

## Homework 3 – KEY

Average: 79.94 + 0pts GI bonus

Due on 10/9/2024, 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.\* Skibidy-Scootiby PTE LTD can produce 5,000 scooters by using 3 alternative combinations of capital (K) and labor (L): (i) 100K and 30L; (ii) 90K and 40L; or (iii) 95K and 25L. Which of the following is accurate?

21%A. Combination (i) is inefficient.

B. Combination (ii) is inefficient.

11%C. Combination (iii) is inefficient.

64%D. All combinations can be efficient.

*[We can only tell that combination (i) is inefficient because (iii) can produce the same output with less of both K and L]*

- 2.✓ Which of the following is the reason why a PC firm faces a horizontal demand?

A. Consumers do not react to price changes. *[The individual demand curve of the PC firm does not pertain to consumer behavior – it shows how the firm perceives the demand]*

B. Consumers do not react to quantity changes. *[Same as above]*

C. The PC firm does not want to sell more if the market price increases. *[Not the case. It could]*

D. A PC firm does not want to cut quantity and increase the price. *[It definitely does want, but it can't]*

81%E. None of the above.

3. Which of the following products is more likely to be heterogeneous?

A. Petrol.

23%B. Instant coffee.

63%C. Laundry detergents.

D. White sugar.

*[Petrol, instant coffee and white sugar are more likely to be homogeneous, since consumers cannot easily tell the difference among different brands]*

$q$	$MC$	$AC$	$FC$
1	25	35	10
2	13	24	10
3	15	21	10
4	21	21	10
5	31	23	10
6	41	26	10
7	54	30	10

**Table 3.1:** quantity ( $q$ ),  $MC$ ,  $AC$  and  $FC$  for a PC firm

4. Refer to table 3.1, which of the following is most likely for the firm if the market price is \$15?
- A. To keep operating indefinitely.
  - 61% B. **To shut-down in the short-run.**
  - 36% C. To shut-down in the long-run.
- [At the price of \$15, the firm will produce 3 units.  $TC = 3 \cdot 21 = 63$ ,  $VC = 63 - 10 = 53$  and  $AVC = 53/3 = 17.67$ . Price is below  $AVC$ , thus the firm must immediately shut down]*
5. Refer to table 3.1, which of the following is most likely for the firm if the market price is \$31?
- 93% A. **To keep operating indefinitely.**
  - B. To shut-down in the short-run.
  - C. To shut-down in the long-run.
- [At the price of \$31, the firm will produce 5 units, and will make profit because price exceeds  $AC$ ]*
6. Refer to Table 3.1. If the market price is \$41, how much is the profit for the firm?
- A. Firm operates at a loss.
  - B. Around \$0.
  - C. Around \$30.
  - D. Around \$60.
  - 89% E. **Around \$90.**
  - F. Around \$120.
  - G. Around \$150.
- [At the price of \$41, the firm produces 6 units and its profit is  $(p - AC) \cdot q = (41 - 26) \cdot 6 = 90$ ]*
7. A firm's rent decreases from \$6,000 to \$5,000 per month. Which of the following is most likely true?
- 98% A.  **$AVC$  will remain constant.**
  - B.  $AVC$  will increase.
  - C.  $AVC$  will decrease.
- [Rent is part of the  $FC$ , which does not affect the  $AVC$ ]*
8. A firm is at the point where  $C < R$  and  $MC > MR$ . Which of the following is accurate?
- A. The firm will earn greater profits by increasing its output.
  - 94% B. **The firm will earn greater profits by decreasing its output.**
  - C. The firm should not change its output.
  - D. The firm is making losses.
  - E. A firm is not possible to be in this situation.
- [ $C < R$  means that the firm has profit. This profit however is not maximized because  $MC > MR$ . The firm can profit more by decreasing output, because currently each additional unit costs higher than the revenue it brings]*

9✓ Which of the following is true about sunk costs in economic decision making?

- A. They should only be taken into consideration if they are fixed. *[They are always fixed]*
- B. They should only be taken into consideration if they are variable. *[They are never variable]*
- C. They should only be taken into consideration if they can be recovered. *[They cannot be recovered]*
- D. They should always be taken into consideration.
- 93%E. They should never be taken into consideration.** *[Because sunk costs are paid regardless of the decision]*

10✓ Which of the following is accurate about the cost curves in the short-run period?

- A. MC is always above AC. *[MC is above the AC only as long as AC is increasing]*
- B. MC is always below AC. *[MC is below the AC only as long as AC is decreasing]*
- 99%C. MC crosses AVC at AVC's minimum.** *[MC and AVC curves intersect at AVC's minimum]*
- D. MC cuts AVC at AVC's maximum. *[AVC may not have a maximum]*