What is Marginal Product?

Worksheet

Marginal product (MP) is the additional output gained from one extra unit of input. For example, if hiring a 5th worker adds 12 more widgets per day, the MP of that worker is 12 units.

Questions

1. If output goes from 200 to 250 units when you hire one more worker, what is MP?

A) 50 units
B) 200 units
C) 250 units
D) 1 unit

2. What is the law of diminishing marginal returns?

A) Output never increases
B) Each new input adds less than the last
C) Workers always cost the same
D) Profit always falls

3. If 2 workers make 60 units and 3 workers make 85 units, what is the MP of the 3rd worker?

A) 60 units
B) 25 units
C) 85 units
D) 28.3 units

4. Negative MP means...

A) Production is impossible
B) Adding more input reduces total output
C) Workers are paid too much
D) The firm is profitable

5. A bakery's daily output with 1 worker is 40 loaves. With 2 workers, it's 75 loaves. What is the marginal product of the 2nd worker?

6. A factory produces 100 units with 3 machines. With 4 machines, it produces 145 units. Calculate MP of the 4th machine.

7. A farm's harvest is 500 kg with 5 workers. With 6 workers, it's 540 kg. What is the MP of the 6th worker?

8. Define: What is marginal product?

9. Define: Does marginal product usually increase or decrease?

10. Define: MP = 0 means what?

Answer Key

1. A) 50 units — MP = change in output = 250 − 200 = 50 units.

2. B) Each new input adds less than the last — As you add more of one input, each additional unit contributes less.

3. B) 25 units — MP = 85 − 60 = 25 units.

4. B) Adding more input reduces total output — Negative MP means the extra worker actually reduces output (overcrowding).

5. Total output with 1 worker = 40 loaves Total output with 2 workers = 75 loaves MP of 2nd worker = 75 − 40 = 35 loaves

6. Output with 3 machines = 100 units Output with 4 machines = 145 units MP = 145 − 100 = 45 units

7. Total harvest (5 workers) = 500 kg Total harvest (6 workers) = 540 kg MP of 6th worker = 540 − 500 = 40 kg

8. The extra output from one additional unit of input (worker, machine, etc.).

9. Typically decreases—this is the law of diminishing marginal returns.

10. Adding more input produces no extra output. The firm is overstaffed.