

1. If $y = 12\sqrt{x}$, $\frac{dy}{dx}$ is
 A. $12x^{\frac{1}{2}}$ B. $6x^{-\frac{1}{2}}$ C. $6x^{\frac{1}{2}}$ D. $6x$.
2. $y = 3x(2x-5)$ then $\frac{dy}{dx}$ is
 A. $3(2x-5)$ B. $6x^2$ C. $6x-5$ D. $12x-15$
3. $y = 3x^2 - 5x + 7$ then $\frac{dy}{dx}$ is
 A. 12 B. $6x-5$ C. $12x-5$ D. 6
4. The gradient of the tangent to the curve $y = 2x^2 - 3x + 5$ at $x = 2$ is
 A. 7 B. 5 C. 4 D. 11
5. The turning point of the curve $y = 3x^2 - 12x + 5$ is
 A. $(2, 0)$ B. $(-2, 41)$ C. $(2, -7)$ D. $(2, 41)$
6. The revenue function of a firm is $R = 1800Q - 5Q^2$.
 What is the value of Q at maximum
 A. 360 B. 180 C. 18000 D. 18
7. The revenue function of a firm is $R = 1200Q - 3Q^2$.
 Find the maximum revenue.
 A. 120,000 B. 360,000 C. 240,000 D. 480,000
8. The demand function of a certain item is $p = 150 - 5Q$.
 What is the price per unit at the maximum revenue
 A. 30 B. 15 C. 75 D. 1125.
9. The total cost function of a firm is $TC = 1500 + 12Q + 0.5Q^2$.
 The average cost per unit when $Q = 100$ is
 A. 32 B. 112 C. 7700 D. 77.

10. The total cost function of a firm is $TC = 2500 + 18Q + 2Q^2$. Find the marginal cost when $Q = 100$

A 24300 B 243 C 418 D 2918

11. The demand function of a product is $Q = 60 - 0.3P$. Find the marginal revenue when $Q = 20$

A 40 B 50 C 1600 D 0

12. The profit function of a firm is $P = -2Q^2 + 200Q - 1500$. Find the maximum profit.

A 5000 B 1500 C 6500 D 3500

13. The total cost function and the total revenue function of a firm are $TC = 2Q^2 - 15Q + 500$ and $TR = 125Q - 3Q^2$. Find the value of Q at maximum profit.

A 11 B 14 C 70 D 55.

14. The total cost function of a firm is $TC = 500 + 20Q + 0.5Q^2$ and the total revenue function is $TR = 120Q - 2Q^2$. Find the maximum profit.

A 2400 B 1100 C 1600 D 500.

15. The demand function of a product is $P = 180 - Q$ and the total cost function is $TC = 1000 + 30Q + 0.5Q^2$. Find the maximum profit.

A 6500 B 2750 C 3750 D 2500.

Answers: ① - B ② - D ③ - D ④ - B ⑤ - C ⑥ - B ⑦ - A
⑧ - C ⑨ - D ⑩ - C ⑪ - A ⑫ - D ⑬ - B ⑭ - D ⑮ - B

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