

Name:

S. No.:

ID:

1. If the total revenue $r = 2q(30 - 0.1q)$ of the number q of units sold, then find the marginal-revenue function:

$$r = 60q - 0.2q^2$$

$$\frac{dr}{dq} = \underline{60 - 0.4q} \quad \text{M.R}$$

③

2. Is the function $f(x) = \begin{cases} \frac{1}{x}, & \text{if } x \neq 0 \\ 0, & \text{if } x = 0 \end{cases}$ continuous at $x = 0$? Justify your answer in details

$$\lim_{x \rightarrow 0^-} f(x) = \lim_{x \rightarrow 0^-} \frac{1}{x} = -\infty$$

$$\lim_{x \rightarrow 0^+} f(x) = \lim_{x \rightarrow 0^+} \frac{1}{x} = \infty$$

$$f(0) = 0$$

It is not cont.
at $x=0$

④

3. If $f(x) = \frac{7x^3 + x}{x}$, then $f'(x) =$

$$f = 7x^2 + 1 \quad \underline{f' = 14x + 0}$$

③

$$14x$$