

IIT-JEE · CBSE **eBOOKS**

CLASS 11 & 12th



Learning Inquiry
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CLASS 12th

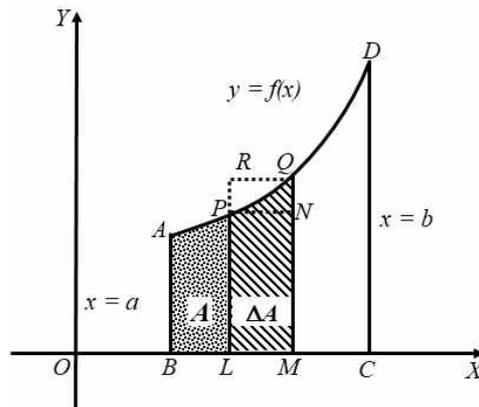
Area Under Curves

misostudy



01. Area of Bounded Regions

Theorem Let $f(x)$ be a continuous function defined on $[a, b]$ then, the area bounded by the curve $y = f(x)$, the x -axis and the ordinates $x = a$ and $x = b$ is given by



$$\int_a^b f(x) dx \text{ or, } \int_a^b y dx$$

Remark 1 If the curve $y = f(x)$ lies below x -axis, then the area bounded by the curve $y = f(x)$, the x -axis and the ordinates $x = a$ and $x = b$ is negative. So area is given by

$$\left| \int_a^b y dx \right|$$

Remark 2 The area bounded by the curve $x = f(y)$, the y axis and the abscissae $y = c$ and $y = d$ is given by

$$\int_c^d f(y) dy \text{ or, } \int_c^d x dy$$

