

QUESTION

Find  $\frac{dy}{dx}$  at a general point on the curve  $y^3 + xy + x^2 = 0$ .

ANSWER

$y^3 + xy + x^2 = 0$ , therefore  $3y^2 \frac{dy}{dx} + x \frac{dy}{dx} + y + 2x = 0$ ,

i.e.  $\frac{dy}{dx}(3y^2 + x) = -(y + 2x)$ , therefore  $\frac{dy}{dx} = -\frac{y + 2x}{3y^2 + x}$ .