Q. 4- Find points at which the tangent to curve $y = x^3 - 3x^2 - 9x + 7$ is parallel to x axis.

Ans.

$$\frac{dy}{dx} = 3x^2 - 6x - 9.$$

Now, the tangent is pallel to x axis, if the slope of the tangent is zero.

$\therefore$ $3x^2 - 6x - 9 = 0$ $\Rightarrow$ $(x-3)(x+1) = 0$

$x = 3$ or -1

when $x = 3$, $y = -20$

$x = -1$, $y = 12$.

Hence points are $(3, -20)$ & $(-1, 12)$.