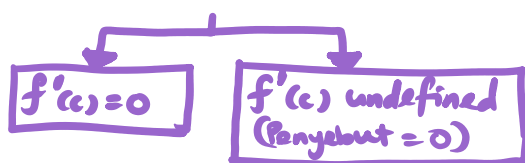


Critical Point
(c, f(c))



Stationary Point

Extremum Point

$$\frac{dy}{dx} = 0$$

1st Derivative Test

Interval of x	x_1 $(-\infty, x_1)$	x_2 (x_1, x_2)	x_2 (x_2, ∞)
$\frac{dy}{dx}$	+	-	+
graph f	increase /	decrease \	increase /

$(x_1, f(x_1))$ maximum point.
 $(x_2, f(x_2))$ minimum point.

2nd Derivative Test

$\frac{d^2y}{dx^2} > 0$ (minimum point)

$\frac{d^2y}{dx^2} < 0$ (maximum point)

$\frac{d^2y}{dx^2} = 0$ (might be point of inflection)

Point of Inflection

$$\frac{d^2y}{dx^2} = 0$$

Interval of x	x_1 $(-\infty, x_1)$	x_1 (x_1, ∞)
$\frac{d^2y}{dx^2}$	+	-
graph f	concave up ∪	concave down ∩

$\therefore (x_1, f(x_1))$ is a point of inflection.