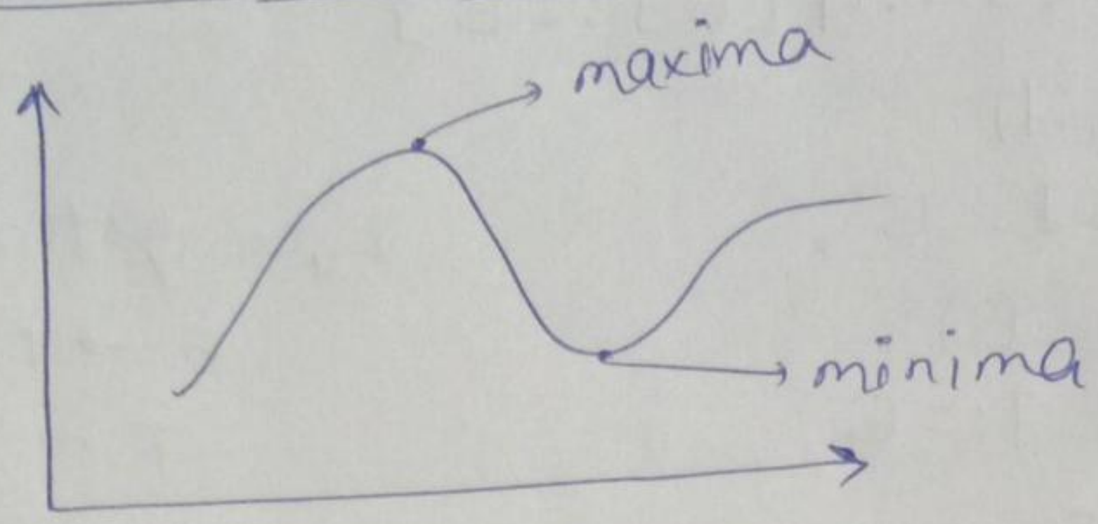
Local maxima and minima ⇒

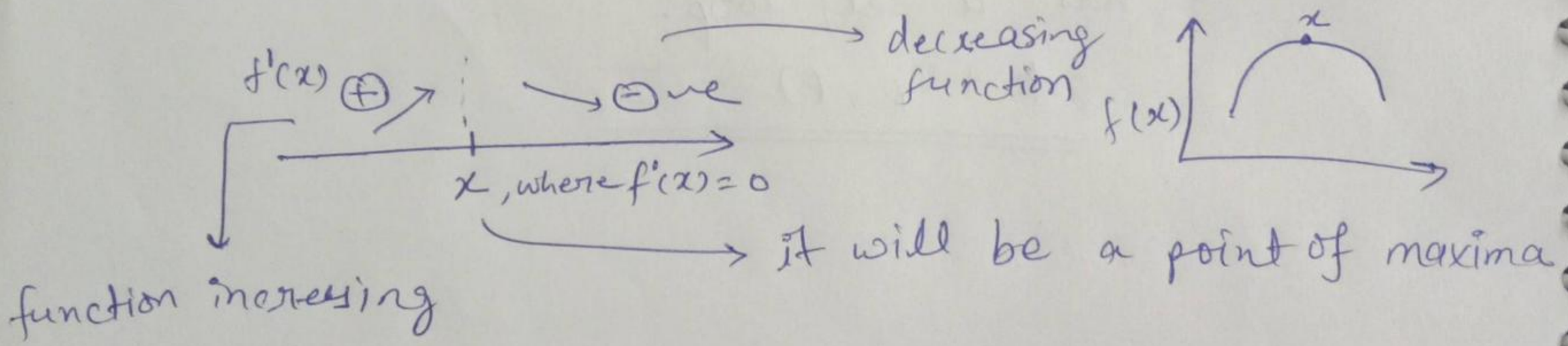


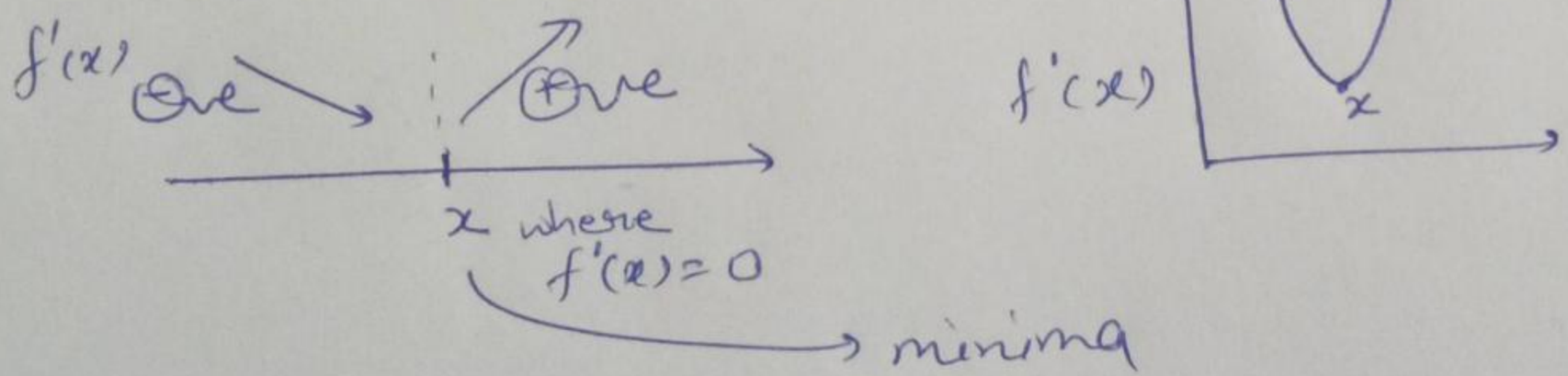
first derivative test ⇒

for a given $f(x)$ to check critical points first solve $f'(x)=0$

and value of x are critical points

* if $f'(x)$ changes sign ~~from~~ accross a critical point, We can find whether it is maxima or minima.





(*) if sign doesn't changes accross critical point then it's neither a point of maxima or minima.

Second Derivative Test ⇒

Find critical points and check the sign of $f''(x)$ at those points.

if c is a critical point then

(i) If $f''(c) > 0$ then c is local minima

(ii) If $f''(c) < 0$ then c is local maxima

(iii) If $f''(c) = 0$ then test fails (we can't conclude anything.