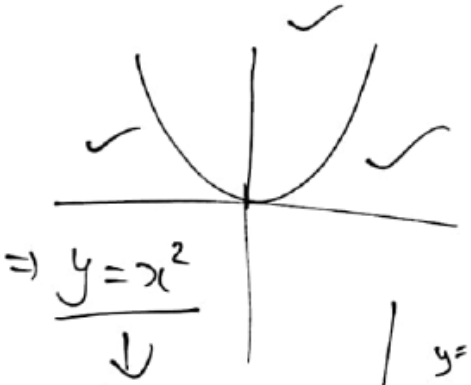
Ch→5 # Continuity & Differentiability #

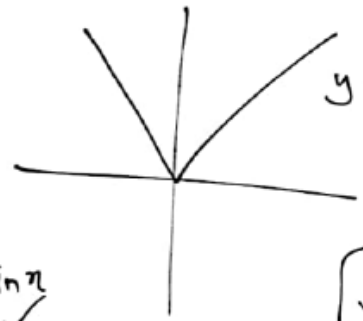
Continuity of a function:- $f(x) = 5x$

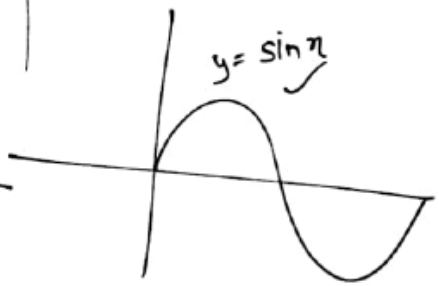


$\Rightarrow y = x^2$

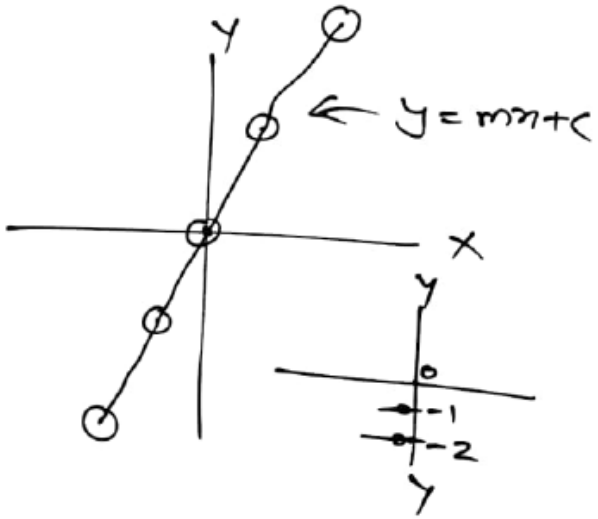
$\downarrow$

$x^2 = 4ay$



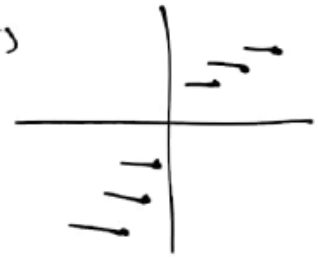


$y = x^2$



$\Rightarrow [x] \rightarrow$ greatest integer func. $[-1] = -1$

not Conti. →



$[-1.9] = -2$	$[-1.6] = -2$
$[-1.8] = -2$	$[-1.3] = -2$
$[-1.75] = -2$	$[-1.1] = -2$
$[-1.7] = -2$	$[-1.01] = -2$

Cha→5 # Continuity & Differentiability #

Continuity of a function:- a fun. is said to be continuous:-

if :- Value of $f(x)$ at point (c) is. -

$$\lim_{x \to c} f(x) = f(c)$$

$$f(x) = \begin{cases} x & ; x \geq 0 \\ -x & ; x < 0 \end{cases}$$

$f(x) = |x|$

Conti. Ques

$f(x) = 5x$

$x = 2 \in R \rightarrow$ c

$$\lim_{x \to 2} f(x) = f(2)$$

$$\Rightarrow \lim_{x \to 2} 5x = 5(2)$$

$$\Rightarrow 5(2) = 10$$

$10 \equiv 10$

$\lim_{x \to 2}$

Right Hand Limit at point c.

$$\lim_{x \to 0^+} f(x) = \lim_{x \to 0^+} (x) = 0$$

Left Hand Limit →

$$\lim_{x \to 0^-} f(x) = \lim_{x \to 0^-} (-x) = -(0) = 0$$

$x < 0$

$\& f(0) = x = 0$

LHL = RHL = f(0)

it is Cont.