

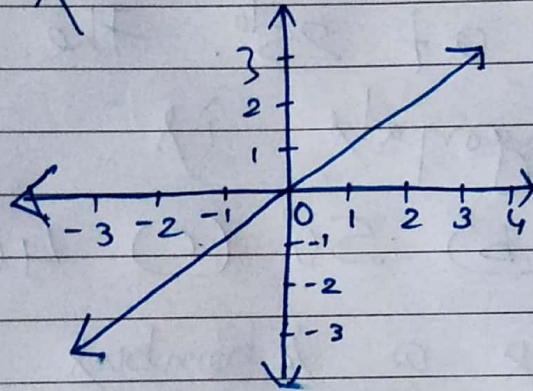
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Class-XI (MATHS)

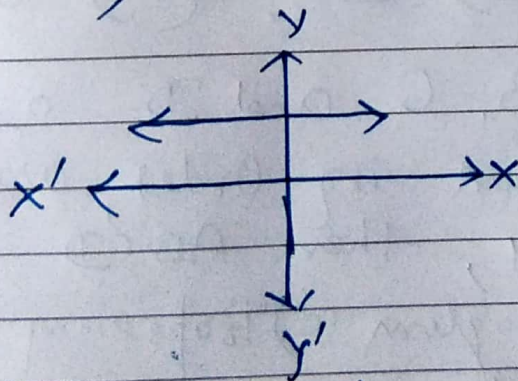
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Topic :- Graphs of Some functions.

i) Identity function :-  $f: \mathbb{R} \rightarrow \mathbb{R}$  by  $f(x) = x$  for each  $x \in \mathbb{R}$ . is called the identity function. Its domain and range of "f" are  $\mathbb{R}$ .



(ii) Constant function :-  $f: \mathbb{R} \rightarrow \mathbb{R}$  by  $f(x) = c$ ,  $x \in \mathbb{R}$ , where  $c$  is a constant, and  $x \in \mathbb{R}$ .

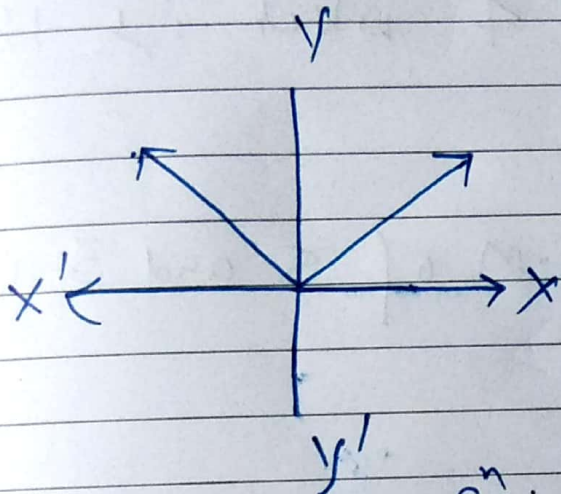


Dom(f) =  $\mathbb{R}$   
Range(f) = {c}

(iii) Rational function :- The function of type  $\frac{f(x)}{g(x)}$ , where  $f(x)$  and  $g(x)$  are polynomial function defined in a domain where  $g(x) \neq 0$ .

(iv) Modulus function  $\Rightarrow$  The function  $f: \mathbb{R} \rightarrow \mathbb{R}$  defined by  $f(x) = |x|$  for each  $x \in \mathbb{R}$  is called Modulus function.

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



(v) Signum  $f^n$   $\Rightarrow$  The function

$f: \mathbb{R} \rightarrow \mathbb{R}$  defined by

$$f(x) = \begin{cases} 1, & \text{if } x > 0 \\ 0, & \text{if } x = 0 \\ -1, & \text{if } x < 0. \end{cases}$$

$$\text{Dom}(f) = \mathbb{R}$$

$$\text{Range}(f) = \{-1, 0, 1\}$$

