

CLASS - XII

MATHS - ASSIGNMENT

Chapter - 4 and 5

Q. (1) using matrix method, solve the following system of equations

$$\textcircled{a) \quad \begin{aligned} x + 2y - 3z &= -4 \\ 2x + 3y + 2z &= 2 \\ 3x - 3y - 4z &= 11 \end{aligned}$$

$$\textcircled{b) \quad \begin{aligned} x + 2y + z &= 7 \\ x + 3z &= 11 \\ 2x - 3y &= 1 \end{aligned}$$

Q. (2) Find the value of 'k' for which the following functions is continuous at $x=3$

$$f(x) = \begin{cases} \frac{(x+3)^2 - 36}{x-3} & (x \neq 3) \\ k & (x = 3) \end{cases}$$

Q. (3) Find the value of k so that the

$$\text{function } f(x) = \begin{cases} \frac{1 - \cos(\theta x)}{8x^2} & (\text{if } x \neq 0) \\ k & (\text{if } x = 0) \end{cases}$$

is continuous at $x=0$

Q. (4) If the function $f(x)$ given by

$$f(x) = \begin{cases} 3ax + b & (\text{if } x > 1) \\ 11 & (\text{if } x = 1) \\ 5ax - 2b & (\text{if } x < 1) \end{cases}$$

is continuous at $x=1$ find the value of 'a' and 'b'

Q. (5)

Differentiate

$$\tan^{-1}\left(\frac{1+\cos x}{\sin x}\right)$$

with respect to x .

Q. (6)

Differentiate

$$\tan^{-1}\left(\frac{\cos x - \sin x}{\cos x + \sin x}\right)$$

with respect to x .

Q. (7)

Differentiate

$$y = \left(\sin^{-1}(\cos(x^2 + 3))\right)^2$$

with respect to " x "