

Q. 4. Answer in detail (Any Two)

(20)

1. Let $y = (x^7 + 1)(8x^9 + 2x + 3)$ find (dx/dy)
2. Find the value $3A^3 - 2BA + 2B$ given $A = \begin{bmatrix} 2 & 0 \\ 1 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 3 & 1 \\ 5 & 0 \end{bmatrix}$
3. Solve the equation $x^3 - 7x^2 + 36 = 0$ given that one root is double of another.
4. Solve the given system of equations by Cramer's rule –

$$\begin{aligned} X + Y &= 2 \\ 2Y - 3Z &= 1 \\ X + 3Z &= 5 \end{aligned}$$

Q. 5. Case study

(15)

$$\begin{pmatrix} 1 & 0 & -4 \\ -2 & 2 & 5 \\ 3 & -1 & 2 \end{pmatrix}$$

Questions :

1. Find matrix D_x, D_y, D_z
2. Estimate adjoint Matrix
3. Write Inverse of given Matrix .
