

Exemplar Problem

Matrix and Determinants

Example 1: If $\begin{vmatrix} 2x & 5 \\ 8 & x \end{vmatrix} = \begin{vmatrix} 6 & 5 \\ 8 & 3 \end{vmatrix}$, then find x .

Ans: Here, we have $\begin{vmatrix} 2x & 5 \\ 8 & x \end{vmatrix} = \begin{vmatrix} 6 & 5 \\ 8 & 3 \end{vmatrix}$

$$\Rightarrow 2x^2 - 40 = 18 - 40$$

$$\Rightarrow 2x^2 = 18$$

$$\Rightarrow x^2 = \frac{18}{2}$$

$$\Rightarrow x^2 = 9$$

$$\Rightarrow x = \sqrt{9}$$

$$\Rightarrow x = \pm 3$$

Hence, value of x is ± 3 .