Related Questions with Solutions

Questions
Quetion: 01
$ \text{If } f(x) = \left \begin{array}{ccc} 1 & x & x+1 \\ 2x & x(x-1) & (x+1)x \\ 3x(x-1) & x(x-1)(x-2) & (x+1)x(x-1) \end{array} \right , \text{then } f(100) \text{ is equal} $
If $f(x) = \begin{bmatrix} 2x & x(x-1) & (x+1)x \\ 0 & (x+1)x & 0 \end{bmatrix}$, then $f(100)$ is equal
to A. 0
B. 1
C. 100
D100
Solutions
Joidtons
Solution: 01
We have
$f(x) = x(x+1)(x-1) \begin{vmatrix} 1 & 1 & 1 \\ 2x & x-1 & x \\ 3x & x-2 & x \end{vmatrix}$ $= x(x+1)(x-1) \begin{vmatrix} 1 & 1 & 1 \\ 2x & x-1 & x \\ 3x & x-2 & x \end{vmatrix} \qquad [C_1 \to C_1 - C_3 \text{ and}]$ $C_2 \to C_2 - C_3] = 0$
$\begin{vmatrix} 3x & x-2 & x \end{vmatrix}$
$= x(x+1)(x-1) \begin{vmatrix} 2x & x-1 & x \end{vmatrix}$ $[C_1 \rightarrow C_1 - C_3 and C_1 \rightarrow C_1 - C_3 and C_2 \rightarrow C_1 - C_3 and C_2 \rightarrow C_1 - C_3 and C_2 \rightarrow C_2 $
$G \rightarrow G$ $G \rightarrow G$ $x = 2$
$C_2 \to C_2 - C_3] = 0$ Hence, $f(100) = 0$
Correct Options
Answer:01
Correct Options: A