CLASS 12 PRE-BOARDS SPECIAL

Chapter 4. Determinants

Ques No.	Question
1	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Using the properties of determinants, prove the following $\begin{vmatrix} 1 & bc & bc(b+c) \\ 1 & ca & ca(c+a) \\ 1 & ab & ab(a+b) \end{vmatrix}$ Watch Free Video Solution on Doubtnut
2	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Using properties of determinants, prove the following $\begin{vmatrix} 3a & -a+b & -a+c \\ a-b & 3b & c-a \\ a-c & b-c & 3c \end{vmatrix} = 3(a+b+c)(ab+bc+ca)$ Watch Free Video Solution on Doubtnut
3	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Using the properties of determinants, prove that following $\begin{vmatrix} a-b & -c^2 & a^2 \\ a^2 & -c & -a^2 \\ b^2 & c^2 & -a-b \end{vmatrix} = (a+b+c)^3$ Watch Free Video Solution on Doubtnut

4	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Using properties of determinants, prove that following $\begin{vmatrix} a+b+2c & a & b \\ c & b+c+2a & b \\ c & a & c+a+2b \end{vmatrix} = 2(a+b+c)^3$ Watch Free Video Solution on Doubtnut
5	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Using properties of determinants, prove the following $\begin{vmatrix} \alpha & \beta & \gamma \\ \alpha^2 & \beta^2 & \gamma^2 \\ \beta+\gamma & \gamma+\alpha & \alpha+\beta \end{vmatrix} = (\alpha-\beta)(\beta-\gamma)(\gamma-\alpha)(\alpha+\beta+\gamma)$ Watch Free Video Solution on Doubtnut
6	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Evaluate $\begin{vmatrix} a+ib & c+id \\ -c+id & a-ib \end{vmatrix}$ Watch Free Video Solution on Doubtnut
7	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Find the cofactor of a_{12} in the following $\begin{vmatrix} 2 & -3 & 5 \\ 6 & 0 & 4 \\ 1 & 5 & -7 \end{vmatrix}$ Watch Free Video Solution on Doubtnut

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What positive value of x makes the following pair of determinants equal? $\begin{vmatrix} 2x & 3 \\ 5 & x \end{vmatrix}, \begin{vmatrix} 16 & 3 \\ 5 & 2 \end{vmatrix}$

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Using properties of determinants, prove that $\begin{vmatrix} b+c & q+r & y+z \\ c+a & r+p & z+x \\ c+b & p+q & x+y \end{vmatrix} = 2\begin{vmatrix} a & p & x \\ b & q & y \\ c & r & z \end{vmatrix}$

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If $\begin{vmatrix} x+1 & x-1 \\ x-3 & x+2 \end{vmatrix} = \begin{vmatrix} 4 & -1 \\ 1 & 3 \end{vmatrix}$, then write the value of x .

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If A_{ij} is the cofactor of the element a_{ij} of the determinant $\begin{vmatrix} 2 & -3 & 5 \\ 6 & 0 & 4 \\ 1 & 5 & -7 \end{vmatrix}$, then write the value of a_{32}. , A_{32}.

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12	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** By using properties of determinants, prove the following $\begin{vmatrix} x+4 & 2x & 2x \\ 2x & x+4 & 2x \\ 2x & 2x & x+4 \end{vmatrix} = (5x+4)(4-x)^2$ Watch Free Video Solution on Doubtnut
13	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Using properties of determinants, prove the following $\begin{vmatrix} a^2 & ab & ac \\ ab & b^2+1 & bc \\ ca & cb & c^2+1 \end{vmatrix} = 1+a^2+b^2+c^2.$ Watch Free Video Solution on Doubtnut
14	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Write the value of the following determinant $\begin{vmatrix} a-b & b-c & c-a \\ b-c & c-a & a-b \\ c-a & a-b & b-c \end{vmatrix}$ Watch Free Video Solution on Doubtnut
15	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Find the value of x, from the following: $\begin{vmatrix} x & 4 \\ 2 & 2x \end{vmatrix} = 0$ Watch Free Video Solution on Doubtnut

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Using properties of determinants, show that $\begin{vmatrix} b+a & a & a \\ b & c+a & b \\ c & c & a+b \end{vmatrix} = 4abc$

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What is the value of the determinant $\begin{vmatrix} 0 & 2 & 0 \\ 2 & 3 & 4 \\ 4 & 5 & 6 \end{vmatrix}$?

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Using properties of determinants, prove the following: $\begin{vmatrix} x & x^2 & px^2 \\ y & y^2 & py^2 \\ z & z^2 & pz^2 \end{vmatrix} = (1+pxyz(x-y)(z-x)$

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Using properties of determinants, prove the following $|x, x+y, x+2y), (x+2y, x, x+y), (x+y, x+2y, x)| = 9y^2(x+y)$

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20	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Prove that the determinant $\begin{vmatrix} x & \sin\theta & \cos\theta \\ -\sin\theta & -x & 1 \\ \cos\theta & 1 & x \end{vmatrix}$ is independent of θ Watch Free Video Solution on Doubtnut
21	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Without expanding, prove that $\Delta = \begin{vmatrix} x+y & y+z & z+x \\ z & x & y \\ 1 & 1 & 1 \end{vmatrix} = 0$ Watch Free Video Solution on Doubtnut
22	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Using properties of determinants, prove that $\begin{vmatrix} -a^2 & ab & ac \\ ba & -b^2 & bc \\ ca & cb & -c^2 \end{vmatrix} = 4a^2b^2c^2$ Watch Free Video Solution on Doubtnut
23	**CLASS 12 PRE-BOARDS SPECIAL - Chapter 4. Determinants** Using properties of determinants, show that ABC is isosceles if $\begin{vmatrix} 1 & 1 & 1 \\ 1+\cos A & 1+\cos B & 1+\cos C \\ \cos^2 A+\cos A & \cos^2 B+\cos B & \cos C^2+\cos C \end{vmatrix} = 0$ Watch Free Video Solution on Doubtnut

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If $\begin{vmatrix} x^3+1 & x^2 & x \\ y^3+1 & y^2 & y \\ z^3+1 & z^2 & z \end{vmatrix} = 0$ and x, y, z are all different then prove that $xyz = -1$

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Prove that $\begin{bmatrix} x & x^2 & 1+px^3 \\ y & y^2 & 1+py^3 \\ z & z^2 & 1+pz^3 \end{bmatrix} = (1+pxyz)(x-y)(y-z)(z-x)$

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Prove that $\begin{vmatrix} (b+c)^2 & a^2 & a^2 \\ b^2 & (c+a)^2 & b^2 \\ c^2 & c^2 & (a+b)^2 \end{vmatrix} = 2abc(a+b+c)^3$

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