

NAME :

CLASS & SEC. :

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ALGEBRA

"A person who can, within a year, solve $x^2 - 92y^2 = 1$ is an mathematician"
- Brahmagupta

- A system of three linear equations in three variables is inconsistent if their planes
 - intersect only at a point
 - intersect in a line
 - coincides with each other
 - do not intersect
- The solution of the system $x + y - 3z = -6$, $-7y + 7z = 7$, $3z = 9$ is
 - $x = 1, y = 2, z = 3$
 - $x = -1, y = 2, z = 3$
 - $x = -1, y = -2, z = 3$
 - $x = 1, y = -2, z = 3$
- If $(x - 6)$ is the HCF of $x^2 - 2x - 24$ and $x^2 - kx - 6$ then the value of k is
 - 3
 - 5
 - 6
 - 8
- $\frac{3y-3}{y} \div \frac{7y-7}{3y^2}$ is
 - $\frac{9y}{7}$
 - $\frac{9y^3}{(21y-21)}$
 - $\frac{21y^2-42y+21}{3y^3}$
 - $\frac{7(y^2-2y+1)}{y^2}$
- $y^2 + \frac{1}{y^2}$ is not equal to
 - $\frac{y^4+1}{y^2}$
 - $\left(y + \frac{1}{y}\right)^2$
 - $\left(y - \frac{1}{y}\right)^2 + 2$
 - $\left(y + \frac{1}{y}\right)^2 - 2$
- $\frac{x}{x^2-25} - \frac{8}{x^2+6x+5}$ gives
 - $\frac{x^2-7x+40}{(x-5)(x+5)}$
 - $\frac{x^2+7x+40}{(x-5)(x+5)(x+1)}$
 - $\frac{x^2-7x+40}{(x^2-25)(x+1)}$
 - $\frac{x^2+10}{(x^2-25)(x+1)}$
- The square root of $\frac{256x^8y^4z^{10}}{25x^6y^8z^6}$ is equal to
 - $\frac{16}{5} \sqrt{\frac{x^2z^4}{y^2}}$
 - $16 \sqrt{\frac{y^2}{x^2z^4}}$
 - $\frac{16}{5} \sqrt{\frac{y}{xz^2}}$
 - $\frac{16}{5} \sqrt{\frac{xz^2}{y}}$
- Which of the following should be added to make $x^4 + 64$ a perfect square
 - $4x^2$
 - $16x^2$
 - $8x^2$
 - $-8x^2$
- The solution of $(2x-1)^2 = 9$ is equal to
 - 1
 - 2
 - 1, 2
 - None of these
- The values of a and b if $4x^4 - 24x^3 + 76x^2 + ax + b$ is a perfect square are
 - 100, 120
 - 10, 12
 - 120, 100
 - 12, 10
- If the roots of the equation $q^2x^2 + p^2x + r^2 = 0$ are the squares of the roots of the equation $qx^2 + px + r = 0$, then g, p, r are in _____
 - A.P
 - G.P
 - Both A.P and G.P
 - none of these
- Graph of a linear equation is a _____
 - straight line
 - circle
 - parabola
 - hyperbola
- The number of points of intersection of the quadratic polynomial $x^2 + 4x + 4$ with the X axis is
 - 0
 - 1
 - 0 or 1
 - 2
- For the given matrix $A = \begin{pmatrix} 1 & 3 & 5 & 7 \\ 2 & 4 & 6 & 8 \\ 9 & 11 & 13 & 15 \end{pmatrix}$ the order of the matrix A^T is
 - 2×3
 - 3×2
 - 3×4
 - 4×3
- If A is a 2×3 matrix and B is a 3×4 matrix, how many columns does AB have
 - 3
 - 4
 - 2
 - 5
- If number of columns and rows are not equal in a matrix then it is said to be a
 - diagonal matrix
 - rectangular matrix
 - square matrix
 - identity matrix
- Transpose of a column matrix is
 - unit matrix
 - diagonal matrix
 - column matrix
 - row matrix
- Find the matrix X if $2X + \begin{pmatrix} 1 & 3 \\ 5 & 7 \end{pmatrix} = \begin{pmatrix} 5 & 7 \\ 9 & 5 \end{pmatrix}$
 - $\begin{pmatrix} -2 & -2 \\ 2 & -1 \end{pmatrix}$
 - $\begin{pmatrix} 2 & 2 \\ 2 & -1 \end{pmatrix}$
 - $\begin{pmatrix} 1 & 2 \\ 2 & 2 \end{pmatrix}$
 - $\begin{pmatrix} 2 & 1 \\ 2 & 2 \end{pmatrix}$
- Which of the following can be calculated from the given matrices

$$A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{pmatrix}, B = \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix}, \text{ (i) } A^2 \text{ (ii) } B^2 \text{ (iii) } AB \text{ (iv) } BA$$
 - (i) and (ii) only
 - (ii) and (iii) only
 - (ii) and (iv) only
 - all of these
- If $A = \begin{pmatrix} 1 & 2 & 3 \\ 3 & 2 & 1 \end{pmatrix}$, $B = \begin{pmatrix} 1 & 0 \\ 2 & -1 \\ 0 & 2 \end{pmatrix}$ and $C = \begin{pmatrix} 0 & 1 \\ -2 & 5 \end{pmatrix}$. Which of the following statements are correct?
 - $AB + C = \begin{pmatrix} 5 & 5 \\ 5 & 5 \end{pmatrix}$
 - $BC = \begin{pmatrix} 0 & 1 \\ 2 & -3 \\ -4 & 10 \end{pmatrix}$
 - $BA + C = \begin{pmatrix} 2 & 5 \\ 3 & 0 \end{pmatrix}$
 - $(ABC) = \begin{pmatrix} -8 & 20 \\ -8 & 13 \end{pmatrix}$
 - (i) and (ii) only
 - (ii) and (iii) only
 - (iii) and (iv) only
 - all of these

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