

A) If $A = \begin{bmatrix} 4 & -1 \\ -1 & 3 \\ 2 & 5 \end{bmatrix}$ $B = \begin{bmatrix} -2 & 5 \\ 3 & -1 \\ 5 & 2 \end{bmatrix}$

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Then find (i) $A+B$ (ii) $3A-2B$

B) If $A = \begin{bmatrix} 1 & 2 \\ 3 & 8 \end{bmatrix}$ $B = \begin{bmatrix} 2 & 5 \\ 1 & 4 \end{bmatrix}$

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Verify that $(A+B)^T = A^T + B^T$

Obtain : $|A|$, $|B|$

C) Solve given equation using inverse of matrix :
 $x-2y+3z=4$; $2x+y-3z=5$; $-x+y+2z=3$

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Q-3

A) Write rules of Limits

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B) Evaluate
 $\lim_{x \rightarrow 0} \frac{2^x - 3^x}{x}$

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C) Evaluate
 $\lim_{x \rightarrow 3} \frac{x^2 + 2x - 15}{x^2 - 9}$

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OR

Evaluate following

A) $\lim_{x \rightarrow a} \frac{x^{16} - a^{16}}{x^8 - a^8}$

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B) $\lim_{n \rightarrow \infty} \frac{1^2 + 2^2 + 3^2 + \dots + n^2}{2n^3}$

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C) $\lim_{x \rightarrow 3} \frac{x-3}{\sqrt{x+3} - \sqrt{6}}$

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