

Var. 1 (131105) *Adeel*
 Find a matrix X
 satisfying the equation
 $X^2 + X = \begin{pmatrix} 24 & 10 & -14 \\ 22 & 12 & -14 \\ 26 & 2 & -8 \end{pmatrix}$ with
 maximal possible eigenvalues.

Var. 2 (131105) *Ali Ovais*
 Find a matrix X
 satisfying the equation
 $X^2 + 5X = \begin{pmatrix} 18 & -4 & -8 \\ -24 & -2 & 8 \\ -12 & -28 & -2 \end{pmatrix}$
 with maximal possible eigenvalues.

Var. 3 (131105) *Faraha*
 Find a matrix X
 satisfying the equation
 $X^2 + 3X = \begin{pmatrix} 10 & 6 & -6 \\ 12 & -2 & 24 \\ -12 & -6 & 4 \end{pmatrix}$
 with maximal possible eigenvalues.

Var. 4 (131105) *Kamran*
 Find a matrix X
 satisfying the equation
 $X^2 - X = \begin{pmatrix} 28 & -22 & -4 \\ 24 & -18 & -12 \\ -16 & 16 & 28 \end{pmatrix}$
 with maximal possible eigenvalues.

Var. 5 (131105) *Ahsan Khan*
 Find a matrix X sat-
 isfying the equation
 $X^2 - 3X = \begin{pmatrix} -14 & -18 & -18 \\ 12 & 4 & 6 \\ 12 & 24 & 22 \end{pmatrix}$
 with maximal possible eigenvalues.

Var. 6 (131105) *Yameen*
 Find a matrix X
 satisfying the equation
 $X^2 - 7X = \begin{pmatrix} -10 & 8 & 8 \\ -6 & -18 & -6 \\ 6 & 12 & 0 \end{pmatrix}$
 with maximal possible eigenvalues.

Var. 7 (131105) *Nehad*
 Find a matrix X
 satisfying the equation
 $X^2 - 2X = \begin{pmatrix} 3 & -5 & 5 \\ 4 & 12 & -13 \\ 4 & 4 & -5 \end{pmatrix}$
 with maximal possible eigenval-
 ues.

Var. 8 (131105) *Shamas*
 Find a matrix X
 satisfying the equation
 $X^2 + 4X = \begin{pmatrix} 4 & 8 & -1 \\ 1 & -3 & 1 \\ -8 & -8 & -3 \end{pmatrix}$
 with maximal possible eigenval-
 ues.

Var. 9 (131105) *Umar*
 Find a matrix X
 satisfying the equation
 $X^2 + 4X = \begin{pmatrix} 21 & 24 & 24 \\ 9 & -9 & -21 \\ -9 & 6 & 18 \end{pmatrix}$
 with maximal possible eigenval-
 ues.

Var. 10 (131105) *Yasir*
 Find a matrix X
 satisfying the equation
 $X^2 + 2X = \begin{pmatrix} 7 & -8 & -8 \\ -8 & 7 & -8 \\ -12 & 12 & 3 \end{pmatrix}$
 with maximal possible eigenval-
 ues.

Var. 11 (131105) *Zunaira*
 Find a matrix X
 satisfying the equation
 $X^2 - 3X = \begin{pmatrix} 16 & -6 & 6 \\ -16 & 26 & -8 \\ -28 & 28 & -10 \end{pmatrix}$
 with maximal possible eigenvalues.

Var. 12 (131105)
 Find a matrix X
 satisfying the equation
 $X^2 + 2X = \begin{pmatrix} 13 & -10 & 10 \\ -1 & -8 & 7 \\ -6 & -6 & 5 \end{pmatrix}$
 with maximal possible eigenval-
 ues.