Quiz 1

[1] If $A = \begin{bmatrix} 2 & 1 \\ -1 & 0 \\ 2 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & -1 \\ 2 & -3 \\ 0 & 2 \end{bmatrix}$

Find, if possible, A + B, A.B, A.A, A.A`, A`.B, |A| and |A.A`|.

[2] Find the eigenvalues and the eigenvectors of : $A = \begin{bmatrix} 2 & 1 \\ 4 & -1 \end{bmatrix}$

Quiz 2

[1]Determine the type of solution of the linear systems :

(a) x – y = 3, – 2x + 2y = 5.

(b) x – y + z = 3, 3x – 2y – z = – 1, – 2x + y + 2z = 4.

[2]If a drug exists in three dosage forms :

The first of concentration 1 mg / tablet , The second of concentration 2 mg / tablet , The third of concentration 4 mg /tablet. If the pharmacist wanted to produce 12 tablets of concentration 3 mg / tablet by mixing whole tablets. Find two possible solutions.

Quiz 3

(1)Find the maximum and minimum points of the functions:

(a) $f(x) = x - 2\ln x$ (b) $f(x) = x^3 + 2$

(2)Find the integrals:

(i) $\int (x^3 + 3^x)dx$ (ii) $\int (\frac{1}{x^3} + 3\cos x)dx$ (iii) $\int (\frac{2^x}{3^x} - 2\sin x)dx$

(iv) $\int (x^3 + 2)^2\, dx$ (v) $\int 2x.(3 + x^2)^5\, dx$ (vi) $\int \frac{x+1}{x^2-3x+2}\, dx$