

Numerical Analysis

Question no.1:

Fit $y = ab^x$ by the method of least squares to the data given below:

x	0	1	2	3	4	5	6	7
y	10	21	35	59	92	200	400	610

Question no.2:

Solve

$$x^5 + 8x^4 + 21x^3 + 21x^2 + 8x + 1 = 0$$

But solution is only present for this following equation.

$$x^5 - 5x^4 + 9x^3 - 9x^2 + 5x - 1 = 0$$

Question no.3:

State the theorem for method of false position.

Question no.4:

Solve the system of equations by gauss law.

$$\begin{cases} 28x + 4y - z = 32, \\ x + 3y + 10z = 24, \\ 2x + 17y + 4z = 35, \end{cases}$$

Question no. 5:

Solve

$$y_{n+2} - 4y_{n+1} + 3y_n = 3^n + 1$$

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Question no.6:

In the following table, one variable of y is incorrect and that y is a cubic polynomial in x.

x	0	1	2	3	4	5	6	7
y	25	21	18	18	27	45	76	123

Question no.7:

Solve the equation

$$x^5 - 5x^4 - 5x^3 + 25x^2 + 4x - 20 = 0$$

Give that its roots are of the form of $\pm a, \pm b, c$

Question no.8:

Remove the second term in the transformed equation

$$x^4 - 8x^3 - x^2 + 68x + 60 = 0$$

And hence solve it.

Question no.9:

By the methods of straight line to the following data:

x	1	2	3	4	5	6	
y	4	8	10	12	16	20	

Question no.10:

For any equations proves the bisection method.