Answer of question 1:

Newton's Method:

$$f(x) = 9x^{3} - 8x + 9$$

$$f(x) = 21x^{2} - 8$$

$$x_{k+1} = x_{k} - \frac{2x_{k}^{3} - 8x_{k} + 9}{71x_{k}^{2} - 8}$$

$$\frac{x_{k}}{\sqrt{x_{k}}} = -1 (k = 0)$$

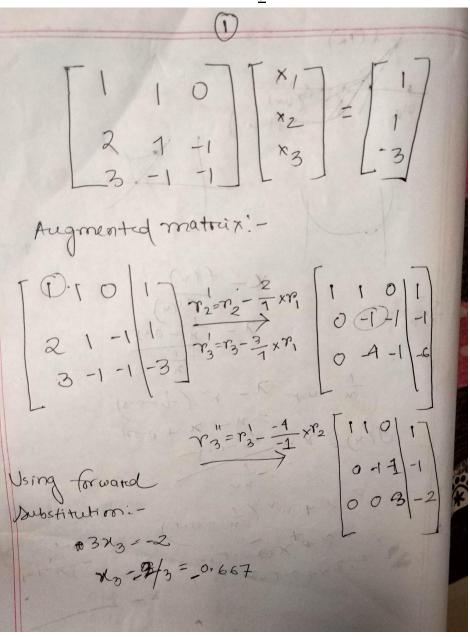
$$\frac{x_{k}}{\sqrt{x_{k}}} = \frac{x_{k}}{\sqrt{x_{k}}} = -1 (k = 0)$$

$$\frac{x_{k}}{\sqrt{x_{k}}} = \frac{x_{k}}{\sqrt{x_{k}}} = -1 (k = 0)$$

$$\frac{x_{k}}{\sqrt{x_{k}}} = -$$

Aitken Acceleration

K	1 4	f(xx)	If (1/2) < 10-6
0 1 2 12	-1 -1.3846159 -1.2759749 -1.2999032 -1.2663802 -1.2630459 -1.2629933	-3.5047797 -3.5047797 -0.3342106 -0.9763392 -0.034/328 -0.000668 0.0012817	NO NO NO NO NO
4 (x	-1.263643 $(5) \approx 6$	2630436	



(2) finding
$$x_2! - (-1)x_2 + (-1)x_3 = -1$$

(-1)x_2 + (-1)x_3 = -1

(-1)x_2 + (-1)x_3 = -1

(-1)x_2 + (-1)x_2 + (-1)x_3 = 1

(-1)x_2 + (-1)x_2 + (-1)x_3 = 1

(-1)x_2 + (-1)x_2 + (-1)x_3 = 1

(-1)x_3 + (-1)x_4 + (-1)x_5 = 1

(-1)x_2 + (-1)x_3 = 1

(-1)x_2 + (-1)x_3 = 1

(-1)x_3 + (-1)x_4 + (-1)x_5 = 1

(-1)x_2 + (-1)x_3 = -1

(-1)x_2 + (-1)x_3 = -1

(-1)x_2 + (-1)x_3 = -1

(-1)x_3 + (-1)x_4 + (-1)x_5 = 1

(-1)x_3 + (-1)x_4 + (-1)x_5 = 1

(-1)x_4 + (-1)x_2 + (-1)x_5 = 1

(-1)x_2 + (-1)x_3 = 1

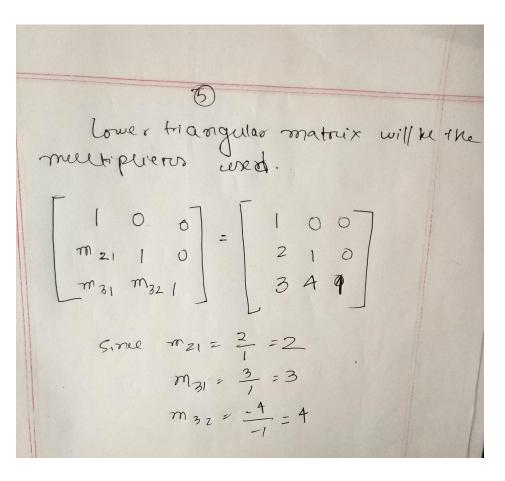
(-1)x_4 + (-1)x_4 + (-1)x_5 = 1

(-1)x_4 + (-1)x_5 + (-1)x_5 = 1

(-1)x_5 + (-1)x_5 + (-1)x_5 = 1

(-1

<u>b</u>



Answer of question 3:

$$P_{2}(\alpha) = -\frac{11}{9}$$

$$P_{2}(\alpha) = a_{0} + a_{1}\alpha + a_{2}\alpha^{2} = f(\alpha)$$

$$P_{2}(\alpha) = a_{1} + a_{1}\alpha_{1} + a_{2}\alpha^{2} = f(\alpha)$$

$$P_{2}(\alpha) = a_{1} + a_{1}\alpha_{1} + a_{2}\alpha^{2} = f(\alpha)$$

$$P_{2}(\alpha) = a_{1} + a_{1}\alpha_{1} + a_{2}\alpha^{2} = f(\alpha)$$

$$P_{3}(\alpha) = a_{1} + a_{1}\alpha_{2} + a_{2}\alpha_{2} = f(\alpha)$$

$$P_{4}(\alpha) = a_{1} + a_{1}\alpha_{2} + a_{2}\alpha_{2} = f(\alpha)$$

$$P_{4}(\alpha) = a_{1} + a_{1}\alpha_{2} + a_{2}\alpha_{2} = f(\alpha)$$

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$$P_{5}(\alpha) = a_{1} + a_{1}\alpha_{2} + a_{2}\alpha_{3} = f(\alpha)$$

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$$P_{5}(\alpha) = a_{1} + a_{2}\alpha_{3} = f(\alpha)$$

$$P_{5}(\alpha) =$$

$$P_{2} = U_{2} - (U_{2}^{T}, q_{1}) q_{1}$$

$$= \begin{pmatrix} 0 \\ -1 \\ 3 \end{pmatrix} - \begin{pmatrix} 0 \\ -1 \\ 1 \end{pmatrix} q_{1}$$

$$= \begin{pmatrix} -2/4 \\ -7/4 \\ 0 \\ 1/4 \end{pmatrix}$$

$$= \begin{pmatrix} -3/4 \\ -7/4 \\ 0 \\ 1/4 \end{pmatrix}$$

$$= \begin{pmatrix} -3/4 \\ -7/4 \\ 0 \\ 1/4 \end{pmatrix}$$

$$= \begin{pmatrix} -3/4 \\ -7/4 \\ 0 \\ 1/4 \end{pmatrix}$$

$$= \begin{pmatrix} -3/4 \\ -7/4 \\ 0 \\ 1/4 \end{pmatrix} - \begin{pmatrix} -1/4 \\ 1/4 \end{pmatrix}^{2} + \begin{pmatrix} -1/4 \\ 1/4 \end{pmatrix}^{2} + \begin{pmatrix} -1/4 \\ 1/4 \end{pmatrix}^{2}$$

$$= \begin{pmatrix} -3\sqrt{35} \\ 2 \\ -1/4 \\ -1/4 \\ -1/4 \end{pmatrix} - \begin{pmatrix} -3\sqrt{35}/10 \\ -\sqrt{35}/70 \\ -\sqrt{35}/70 \end{pmatrix}$$

$$P_{3} = U_{3} - (U_{3}^{T}, q_{1}) \cdot q_{1} - (U_{3}^{T}, q_{2}) \cdot q_{2}$$

$$= \begin{pmatrix} -8/7 \\ -16/7 \\ 10/9 \end{pmatrix}$$

92 = 1	12. Vonat 1 201
$\frac{-22}{-4\sqrt{159}}$ $\frac{-4\sqrt{159}}{77}$ $\frac{5\sqrt{154}}{154}$	b. hartie
$9 = \frac{1/2}{1/2} - \frac{35}{40} \frac{154}{20}$ $\frac{1/2}{1/2} - \frac{35}{40} \frac{1}{70}$ $\frac{1/2}{1/2} - \frac{1}{35} \frac{1}{70}$ $\frac{1}{7} \frac{1}{2} \frac{1}{2$	59 7 59

(a)
$$R = \begin{pmatrix} u_1^{\dagger} q_1 & u_2^{\dagger} q_2 & u_3^{\dagger} q_1 \\ 0 & u_2^{\dagger} q_2 & u_3^{\dagger} q_2 \\ 0 & 0 & u_3^{\dagger} q_3 \end{pmatrix}$$

$$= \begin{pmatrix} 2 & 9 / 2 & 1 / 2 \\ 0 & 15 / 25 & 15 / 25 \\ 0 & 0 & 2 \sqrt{15} q_1 \end{pmatrix}$$

$$= \begin{pmatrix} 2 & 3 / 2 & 1 / 2 \\ 0 & 0 & 2 \sqrt{15} q_1 \end{pmatrix}$$

$$= \begin{pmatrix} 2 & 0 / 2 & 1 / 2 \\ 0 & 0 & 2 \sqrt{15} q_1 \end{pmatrix}$$

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 $m_{3} \Rightarrow a_{2} = +7.0103 \times \frac{7}{154 \times 2} \cdot (a_{2} = 1.077)$ $m_{2} \Rightarrow \frac{85}{2} a_{1} + 12.5326 = -8.11314$ $(a_{3} = -6.0795)$ $(a_{3} \Rightarrow -6.0795)$