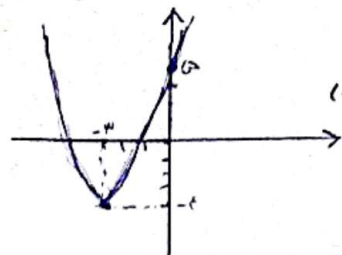


$$\text{ent} \begin{cases} \frac{-b}{ra} = \frac{-y}{r} = -w \\ \frac{-d}{ra} = \frac{-1y}{r} = -r \end{cases} \rightarrow \begin{bmatrix} -w \\ -r \end{bmatrix}, \min \text{ cost}$$



جمع ضربی است - ضرب

$$0 = -x^2 + 4x - 4 \rightarrow \begin{cases} x = 1 \\ \frac{c}{a} = \frac{-4}{-1} = 4 \end{cases} \quad (1)$$

الف: $\Delta \mu + \mu_B \frac{1}{2} \approx 0 \Rightarrow \mu_B - \mu_{ac} > 0$

ب) Δ باید منفی باشد $\rightarrow b^2 - 4ac = 0 \rightarrow 9 - 4a = 0 \rightarrow 4a = 9 \rightarrow a = \frac{9}{4}$

ج) Δ باید منفی باشد $\rightarrow b^2 - 4ac < 0 \rightarrow 9 - 4a < 0 \rightarrow 4a > 9 \rightarrow a > \frac{9}{4}$

د) Δ معرنا صفت باشد $\rightarrow 0 \leq b^2 - 4ac \leq 9 \rightarrow 0 \leq 9 - 4a \leq 9 \rightarrow -9 \leq -4a \leq 0 \rightarrow \frac{9}{4} \leq a \leq \frac{9}{2}$

$$\text{و) } x^p - px - 1 + p = +p \rightarrow (x-1)^p = p \rightarrow x-1 = \pm \sqrt[p]{p} \rightarrow \boxed{x = \pm \sqrt[p]{p} + 1}$$

$$\text{---}) x^p - x - 1 + 1, \nu_a = 1, \nu_a \rightarrow (x - \frac{1}{p})^p = 1, \nu_a \rightarrow x - \frac{1}{p} = \pm \sqrt[p]{1, \nu_a}$$

$$\rightarrow \boxed{x = \frac{\pm \sqrt{1,40}}{1}} + \frac{1}{4}$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a} \xrightarrow{\Delta = b^2 - 4ac} \frac{r \pm \sqrt{\Delta}}{r} \begin{cases} \frac{r(1+\sqrt{r})}{r} = 1+\sqrt{r} \\ \frac{r(1-\sqrt{r})}{r} = 1-\sqrt{r} \end{cases}$$

$$\frac{-b \pm \sqrt{\Delta}}{2a} \quad \Delta = b^2 - 4ac \rightarrow 1 + 12 = 13$$

$$x = \frac{-1 \pm \sqrt{13}}{1}$$

$$\text{الف) } (x-v)(x-f) = 0 \rightarrow \begin{cases} x=v \\ x=f \end{cases}$$

$$\text{ب) } (x+v)(x-f) = 0 \rightarrow \begin{cases} x=-v \\ x=f \end{cases}$$

$$\text{الف) } \omega x^2 - 12x + 3 = 0 \rightarrow x^2 - 12x + 3 = 0 \rightarrow (x-v)(x-a) = 0 \rightarrow \begin{cases} x=v \rightarrow x_2 = \frac{v}{\omega} \\ x=a \rightarrow x_2 = \frac{a}{\omega} = 1 \end{cases}$$

$$\text{ب) } \omega x^2 - 10x + 1 = 0 \rightarrow x^2 - 10x + 1 = 0 \rightarrow (x-v)(x-3) = 0 \rightarrow \begin{cases} x=v = \frac{1}{3} \\ x=3 = \frac{3}{1} = 1 \end{cases}$$

الف) جمع فزاینده است $\rightarrow \begin{cases} 1 \\ \frac{c}{a} = \frac{3}{2} \end{cases}$

$$\text{ب) } a+c=3 \rightarrow \begin{cases} -1 \\ -\frac{c}{a} = -\frac{3}{2} \end{cases}$$

$$\text{ج) } \frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow \frac{a \pm \sqrt{14}}{2}$$

$$\text{د) } \frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow \text{نمی توان نوشت} \\ \Delta = b^2 - 4ac \rightarrow 49 - 144 = -95$$

$$\Delta = (-5)^2 - 4 \cdot 1 \cdot 1 = 1$$

$$\text{الف) } \left(\frac{3}{1}\right)^2 - 2\left(\frac{-2}{1}\right) = 13$$

$$S = \frac{-b}{a}$$

$$P = \frac{c}{a}$$

$$\text{ب) } \left(\frac{3}{1}\right)^3 - 3\left(\frac{3}{1}\right)\left(\frac{-2}{1}\right) = 15$$

$$\text{الف) } \binom{5}{5} = \binom{5}{4} + \binom{5}{3} \rightarrow \frac{5 \times 4}{2} + \frac{5 \times 1}{1} = 10 + 5 = 15$$

$$\text{ب) } \binom{9}{3} - \binom{1}{1} = \frac{9 \times 8 \times 7}{1 \times 2 \times 3} - \frac{1 \times 1}{1} = 84 - 1 = 83$$