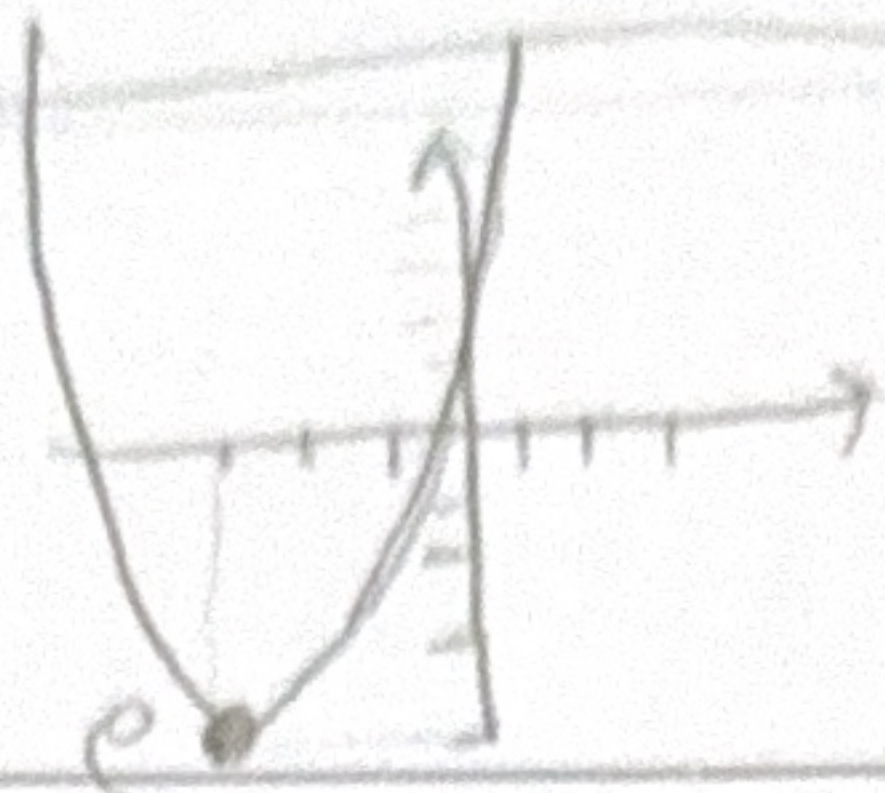


$$\frac{-b}{2a} = \frac{-7}{2} = -3.5 \rightarrow e \mid -3.5$$

$$f(-3.5) = (-3.5)^2 + 7(-3.5) + 10 = -4.25 \rightarrow \text{معمول}$$

$$x = -3.5 \rightarrow U_{\min}$$

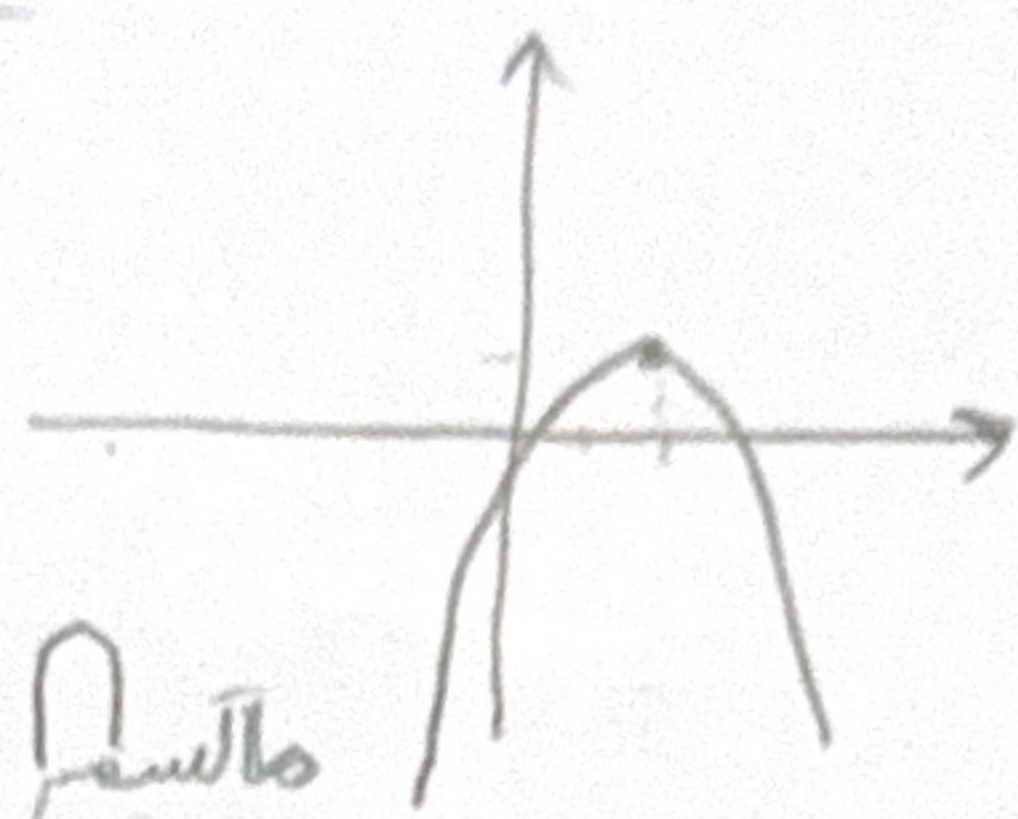


(ا)

(ب)

$$x = \frac{-b}{2a} = \frac{-3}{-2} = 1.5 \rightarrow e \mid 1.5$$

$$f(1.5) = -4 + 8 - 3 = 1 \rightarrow \text{معمول}$$



(الف)

(ب)

$$3 \text{ و } 1 \rightarrow \frac{c}{a} = 1 \rightarrow \text{جمع ضرب} = 0$$

(الف) به راهی نداریم (در نتیجه او 1 جواب می شود)

(ب) به راهی نداریم و جواب 3 می شود

(ج) به راهی نداریم جواب نداریم

(د)

$$x^2 - 2x + 1 = (x-1)^2 = 2 \rightarrow x-1 = \sqrt{2} \rightarrow x = \sqrt{2} + 1$$

$$x-1 = -\sqrt{2} \rightarrow x = -\sqrt{2} + 1$$

(الف)

$$x = \frac{\sqrt{5}+1}{2} \text{ و } \frac{\sqrt{5}-1}{2}$$

$$x^2 - x + 1 = 0 \rightarrow x^2 - x + \frac{1}{4} = \frac{5}{4} \rightarrow (x - \frac{1}{2})^2 = \frac{5}{4} \rightarrow (x - \frac{1}{2}) = \sqrt{\frac{5}{4}}$$

$$\frac{-b \pm \sqrt{\Delta}}{2a} = \frac{1 \pm \sqrt{17}}{2} \rightarrow \frac{1 + \sqrt{17}}{2} = \frac{1 + 2\sqrt{2}}{2} = 1 + \sqrt{2}$$

$$\frac{1 - \sqrt{17}}{2} = \frac{1 - 2\sqrt{2}}{2} = 1 - \sqrt{2}$$

$$\Delta = 17 \rightarrow x = \frac{-1 \pm \sqrt{17}}{2} = \frac{-1 + \sqrt{17}}{2} \text{ و } \frac{-1 - \sqrt{17}}{2}$$

(ب)

$$(x-4)(x-7)=0 \quad x-4=0 \rightarrow x=4$$

$$x-7=0 \rightarrow x=7$$

(الف)

$$(x-4)(x+7)=0 \quad x=4, -7$$

(ب)

$$x^2 - 12x + 35 \rightarrow (x-7)(x-5)=0 \rightarrow x=7 \text{ و } 5$$

(الف)

$$x^2 - 10x + 21 \rightarrow (x-3)(x-7)=0 \rightarrow x=3 \text{ و } 7$$

(ب)

(الف) جمع ضرایب صفر است $\rightarrow x=1 \text{ و } \frac{3}{4}$ $\rightarrow x=1 \text{ و } \frac{c}{a}$

(ب) $x = -1 - \frac{c}{a} \leftarrow x = -1 - \frac{3}{4} \leftarrow x = -1 \text{ و } -\frac{3}{4}$

$$\Delta = 25 - 4 \times 21 = 17 \rightarrow x = \frac{5 + \sqrt{17}}{2} \text{ و } \frac{5 - \sqrt{17}}{2}$$

(ج)

(د) $\Delta = 49 - 144 = -95$ $\rightarrow$ چون Δ منفی است جواب $\sqrt{\Delta}$ منفی $\rightarrow$ جواب ندارد

$$S = \frac{-b}{a} \quad P = \frac{c}{a}$$

$\downarrow$ $\downarrow$
3 -2

(الف) $9 - (-4) = 13$

(ب) $27 + 18 = 45$

$$\frac{1 \times 4 \times 4 \times 8 \times 1}{4 \times 4 \times 4 \times 4 \times 1} = 21$$

$$21 + 37 = 58$$

(الف)

$$\frac{9 \times 1}{4} = 2 \frac{1}{4}$$

$$14 - 21 = -7$$

(ب)

$$\frac{2 \times 9 \times 4 \times 1}{1 \times 8 \times 4 \times 1} = 1 \frac{1}{2}$$

$$\frac{4 \times 1 \times 1}{1 \times 1 \times 1} = 4$$