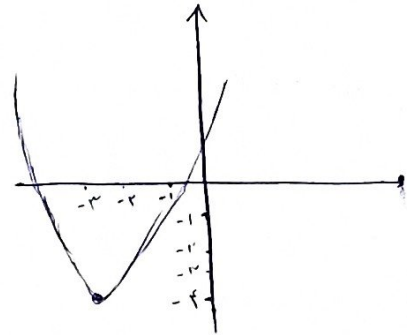


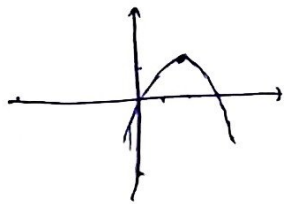
الف

$$\text{Min} \quad \left| \begin{array}{l} -\frac{b}{2a} = -\frac{4}{2} = -2 \\ -f \end{array} \right.$$

ب



$$\text{الف} \quad \text{Max} \quad \left| \begin{array}{l} -\frac{b}{2a} = -\frac{4}{-2} = 2 \\ 1 \end{array} \right.$$



$$\text{ب} \quad a+b+c=0$$

$$x=1$$

$$x = \frac{c}{a} = \frac{-2}{-1} = 2$$

$$\Delta = 9 - 4a$$

$$\Delta > 0 \rightarrow a < \frac{9}{4}$$

الف

$$\Delta = 0 \rightarrow a = \frac{9}{4}$$

ب

$$a > \frac{9}{4} \quad \text{ج}$$

$$\Delta < 0 \rightarrow a > \frac{9}{4}$$

ج

$$\text{الف} \quad x^2 - 2x - 1 + 2 = 2 \rightarrow (x-1)^2 = 2 \rightarrow x-1 = \pm\sqrt{2} \rightarrow \begin{cases} x = 1+\sqrt{2} \\ x = 1-\sqrt{2} \end{cases}$$

$$\text{ب} \quad x^2 - x - 1 + \frac{9}{4} = \frac{9}{4} \rightarrow (x - \frac{1}{2})^2 = \frac{9}{4} \rightarrow x - \frac{1}{2} = \pm\sqrt{\frac{9}{4}} \rightarrow \begin{cases} x = \frac{1+\sqrt{9}}{2} \\ x = \frac{1-\sqrt{9}}{2} \end{cases}$$

$$\text{الف} \quad \Delta = 4 + 4 = 8$$

$$x = \frac{-2 \pm \sqrt{8}}{-1}$$

$$\begin{cases} x = -2 - \sqrt{8} \\ x = -2 + \sqrt{8} \end{cases}$$

$$\text{ب} \quad \Delta = 1 + 14 = 15$$

$$x = \frac{-1 \pm \sqrt{15}}{-4}$$

$$\begin{cases} x = \frac{1+\sqrt{15}}{4} \\ x = \frac{1-\sqrt{15}}{4} \end{cases}$$

الف ، $(x-4)(x-7) = 0 \rightarrow x=4$
 $\rightarrow x=7$

ب ، $(x+7)(x-4) = 0 \rightarrow x = -7$
 $\rightarrow x = +4$

الف ، $x^2 - 12x + 35 = 0 \rightarrow (x-7)(x-5) = 0 \rightarrow x = \frac{7}{5}$
 $x = \frac{5}{3} = 1$

ب ، $x^2 - 10x + 21 = 0 \rightarrow (x-7)(x-3) = 0 \rightarrow x = \frac{7}{3} = 1$
 $x = \frac{3}{7}$

الف ، $a+b+c = 0 \rightarrow x = +1$
 $x = \frac{c}{a} = \frac{3}{7}$

2, $\Delta = 20 - 1 = 19$

$x = \frac{a \pm \sqrt{\Delta}}{2} \rightarrow x = \frac{a + \sqrt{19}}{2}$
 $x = \frac{a - \sqrt{19}}{2}$

ب ، $a+c = b \rightarrow x = -1$
 $x = -\frac{c}{a} = -\frac{3}{7}$

3, $\Delta = 49 - 144 = -95 \rightarrow$ دلتا منفی پس
 ریشه ندارد

الف ، $\left(\frac{-(-3)}{1}\right)^2 - 2 \times \frac{-2}{1} = 9 + 4 = 13$

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

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

ب ، $\left(\frac{3}{1}\right)^2 - 2 \times \frac{3}{1} \times \frac{-2}{1} = 9 + 12 = 21$

الف ، $\frac{4 \times 4^3}{4} + \frac{9 \times 4^2}{4} = 21 + 36 = 57$

$(a^4) = (4^4)$

ب ، $\frac{9 \times 4^2}{4 \times 4} - \frac{4 \times 4}{4} = 18 - 4 = 14$