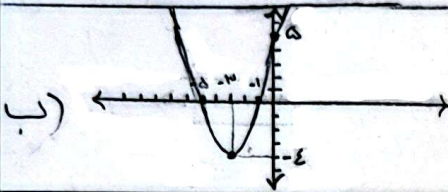
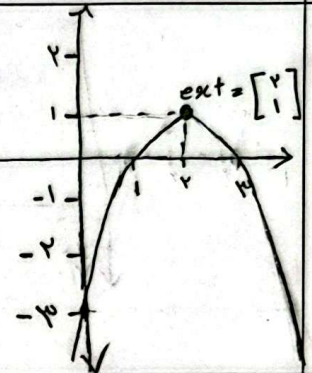


الف) $\Rightarrow$ عنصرات $\Rightarrow$ ext $\left| \begin{array}{l} \frac{-b}{2a} = \frac{-4}{2} = -2 \\ \frac{-\Delta}{2a} = \frac{-(16-20)}{2} = \frac{-14}{2} = -7 \end{array} \right.$ $\left| \begin{array}{l} y = x^2 + 4x + a \leftarrow \text{معادلة} \\ \text{مينيموم} \Rightarrow a > 0 \Rightarrow \text{Min} \end{array} \right.$



$$y = -x^2 + 2x - 10 \quad \text{abobca}$$

الف) exact $\left| \begin{aligned} \frac{-b}{1a} &= \frac{-(-1)}{-1} = \underline{1} \\ \frac{-\Delta}{2a} &= \frac{-((14)^2 - 4(-1)(-1))}{-2} = \frac{-(14-14)}{-2} = \frac{0}{-2} = \underline{0} \end{aligned} \right.$



ب) $-x^2 + 2x - 3 = 0$ $-1 + 2 - 3 = 0$

$\Rightarrow \begin{cases} x = 1 \\ x = \frac{c}{a} = \frac{n}{-1} \end{cases} \quad \text{مختصات در نقاط } \begin{bmatrix} 1 \\ 0 \end{bmatrix} \text{ و } \begin{bmatrix} n \\ 0 \end{bmatrix} \text{ محور را قطع می کنند.}$

$$p_x^r - p_x^w x + a = 0 \Leftrightarrow a \leq 0$$

$$\{a \mid a \in \mathbb{R}, a < \frac{9}{\wedge}\}$$

$$\{a \mid a \in \mathbb{R}, a = \frac{9}{1}\} \Leftarrow a = \frac{9}{1}$$

$$\{a \mid a \in \mathbb{R}, a \geq \frac{9}{2}\}$$

$$\{a \mid a \in \mathbb{R}, a \geq \frac{9}{\lambda}\}$$

الف) $x^2 - 2x - 1 = 0 \Rightarrow x^2 - 2x + 1 = 2 \Rightarrow (x-1)^2 = 2 \Rightarrow x-1 = \pm\sqrt{2} \Rightarrow \begin{cases} x = 1 + \sqrt{2} \\ x = 1 - \sqrt{2} \end{cases}$

$$\text{ب) } x^r - x - 1 = 0 \Rightarrow x^r - rx + \frac{1}{r} = \frac{\Delta}{r} \Rightarrow (x - \frac{1}{r})^r = \frac{\Delta}{r} \Rightarrow x - \frac{1}{r} = \pm \frac{\sqrt[r]{\Delta}}{r} = \begin{cases} x = \frac{1 + \sqrt[r]{\Delta}}{r} \\ x = \frac{1 - \sqrt[r]{\Delta}}{r} \end{cases}$$

$$x^2 - 2x - 1 = 0 \text{ (الف)}$$

$$\Delta = b^r - \varepsilon(a)(c) \Rightarrow (-2)^r - \varepsilon(1)(-1) = \varepsilon + \varepsilon = \underline{\underline{\Lambda}}$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a} \Rightarrow \frac{-(-2) \pm \sqrt{4}}{2(1)} = \frac{2 \pm \sqrt{4}}{2} \Rightarrow \left\{ \begin{array}{l} x = \frac{2 + \sqrt{4}}{2} = 2 \\ x = \frac{2 - \sqrt{4}}{2} = 0 \end{array} \right.$$

ب) $x^2 + x - 2 = 0$

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

$$x \Rightarrow \frac{-(1) \pm \sqrt{14}}{2(1)} = \frac{-1 \pm \sqrt{14}}{2} \Rightarrow \left\{ x = \frac{-1 + \sqrt{14}}{2} \right.$$

الف) $x^2 - 11x + 28 = 0$

$x^2 - 11x + 28 = (x-7)(x-4) = 0 \Rightarrow \begin{cases} x=7 \\ x=4 \end{cases}$

ب) $x^2 + 3x - 28 = 0$

$x^2 + 3x - 28 = (x+7)(x-4) = 0 \Rightarrow \begin{cases} x=-7 \\ x=4 \end{cases}$

الف) $5x^2 - 12x + 7 = 0 \Rightarrow x^2 - 12x + 35 = 0 \Rightarrow (x-5)(x-7) = 0 \Rightarrow \begin{cases} x=5 \\ x=7 \end{cases}$

ب) $3x^2 - 10x + 7 = 0 \Rightarrow x^2 - 10x + 21 = 0 \Rightarrow (x-7)(x-3) = 0 \Rightarrow \begin{cases} x=7 \\ x=3 \end{cases}$

الف) $2x^2 - 5x + 3 = 0$ $a+b+c=0$ $2+(-5)+3=0 \Rightarrow \begin{cases} x=1 \\ x=\frac{3}{2} \end{cases}$

جمع ضرایب

ب) $2x^2 + 5x + 3 = 0$ $a+c=b$ $2+3=5 \Rightarrow \begin{cases} x=1 \\ x=-\frac{3}{2} \end{cases}$

جمع ضرایب

ج) $2x^2 - 5x + 1 = 0$ $\Delta = (-5)^2 - 4(2)(1) = 25 - 8 = 17$ $x = \frac{5 \pm \sqrt{17}}{4} \Rightarrow \begin{cases} x=\frac{5+\sqrt{17}}{4} \\ x=\frac{5-\sqrt{17}}{4} \end{cases}$

دلتا

د) $4x^2 + 7x + 9 = 0$ $\Delta = 7^2 - 4(4)(9) = 49 - 144 = -95$

دلتا

دلتا منفی است پس معادله جوابی در مجموعه اعداد حقیقی ندارد.

$x^2 - 3x - 2 = 0$

$S = \frac{-b}{a}$ $\Delta > 0$
 $P = \frac{c}{a}$

$S = 3$

$P = -2$

الف) $S^2 - 2P = 9 + 4 = 13$
 $(\frac{-(-3)}{1})^2 - 2(\frac{-2}{1})$

ب) $S^3 - 3SP = 27 + 12 = 39$
 $(\frac{-(-3)}{1})^3 - 3(\frac{-3}{1})(\frac{-2}{1})$
 $\frac{27 \times 3 \times -2}{-9 \times 1 \times 1}$

الف) $\binom{5}{4} + \binom{9}{2} = \frac{5 \times 4 \times 3 \times 2 \times 1}{1 \times 4 \times 3 \times 2 \times 1} + \frac{9 \times 8 \times 7 \times 6 \times 5}{1 \times 8 \times 7 \times 6 \times 5} = 5 + 36 = 41$

ب) $\binom{9}{3} - \binom{1}{2} = \frac{9 \times 8 \times 7 \times 6 \times 5}{1 \times 8 \times 7 \times 6 \times 5} - \frac{1 \times 1 \times 1}{1 \times 1 \times 1} = 84 - 1 = 83$