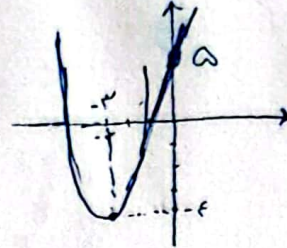
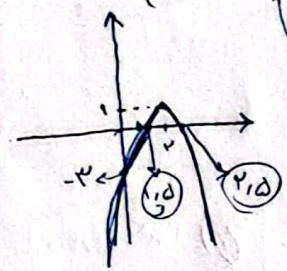


الف) $y = x^2 + 2x + 5$ $a > 1$: min min $\left\{ \begin{array}{l} -\frac{b}{2a} = -\frac{2}{2} = -1 \\ -\frac{\Delta}{4a} = -\frac{16}{4} = -4 \end{array} \right\}$ $\left(\begin{array}{c} -1 \\ -4 \end{array} \right)$ $\Delta = b^2 - 4ac : 4 - 20 = -16$	ب) 	1
$y = x^2 + 2x - 3$ $y = -x^2 + 2x - 3 \rightarrow a < 1$: max max $\left\{ \begin{array}{l} -\frac{b}{2a} = -\frac{2}{-2} = 1 \\ -\frac{\Delta}{4a} = -\frac{16}{-4} = 4 \end{array} \right\}$ $\left(\begin{array}{c} 1 \\ 4 \end{array} \right)$ $\Delta = b^2 - 4ac$ $\rightarrow 4 - 4(-1)(-3) = -8$	ج)  د نقاط $(-1, 0), (1, 4), (3, 0)$ محور ها	2
الف) $b^2 - 4ac \neq 0$ $\rightarrow 4 - 1a = + \Rightarrow a \in \mathbb{R}, a < 1$ ب) $b^2 - 4ac = 0$ $\rightarrow 4 - 1a = 0 \Rightarrow a = 4$	ج) $b^2 - 4ac \neq 0$ $\rightarrow 4 - 1a = - \Rightarrow a > 1, a \in \mathbb{R}$ د) $b^2 - 4ac \neq 0$ $\rightarrow 4 - 1a \neq - \Rightarrow a < 4, a \in \mathbb{R}$	3
الف) $x^2 - 2x - 1 = 0 \Rightarrow x^2 - 2x + 1 = 2 \rightarrow (x-1)^2 = 2 \rightarrow x-1 = \pm\sqrt{2} \rightarrow x = \pm\sqrt{2} + 1$	ب) $x^2 - x - 1 = 0 \Rightarrow x^2 - x + \frac{1}{4} = \frac{5}{4} \rightarrow (x - \frac{1}{2})^2 = \frac{5}{4} \rightarrow x - \frac{1}{2} = \pm\sqrt{\frac{5}{4}} \rightarrow x = \pm\sqrt{\frac{5}{4}} + \frac{1}{2}$	4
الف) $x^2 - 2x - 1 = 0$ $\Delta = 4 + 4 = 8 \Rightarrow \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{2 \pm \sqrt{8}}{2} = \frac{2 \pm 2\sqrt{2}}{2} = 1 \pm \sqrt{2} = x$	ب)	5
ب) $x^2 + x - 4 = 0$ $\Delta = 1 + 16 = 17 \Rightarrow \frac{-1 \pm \sqrt{17}}{2}$	ج)	5

$$\text{الف) } x^2 - 11x + 28 = 0$$

$$(x-7)(x-4) = 0 \Rightarrow x = \begin{matrix} 7 \\ 4 \end{matrix}$$

$$\text{ب) } x^2 + 3x - 28 = 0$$

$$(x+7)(x-4) = 0 \Rightarrow x = \begin{matrix} -7 \\ 4 \end{matrix}$$

$$\text{الف) } \omega x^2 - 12x + 5 = 0 \Rightarrow x^2 - 12x + 5\omega = 0$$

$$(x-5)(x-\omega) = 0 \Rightarrow x = \begin{cases} 5 \\ \omega \end{cases}$$

$$\frac{\omega}{5} = 1$$

$$\text{ب) } 3x^2 - 10x + 5 = 0 \Rightarrow x^2 - 10x + 21 = 0$$

$$(x-7)(x-3) = 0 \Rightarrow x = \begin{cases} 7 \\ 3 \end{cases}$$

$$\frac{7}{3} = 1$$

$$\text{الف) } x^2 - 5x + 4 = 0 \Rightarrow x = \begin{cases} 1 \\ 4 \end{cases}$$

$$\frac{c}{a} = \frac{4}{1}$$

$$\text{ج) } x^2 - 5x + 1 = 0$$

$$\Delta = 25 - 4 = 21$$

$$x = \frac{5 \pm \sqrt{21}}{2}$$

$$\text{ب) } x^2 + 5x + 4 = 0 \Rightarrow x = \begin{cases} -1 \\ -4 \end{cases}$$

$$-\frac{c}{a} = -\frac{4}{1}$$

$$\text{د) } x^2 + 7x + 9 = 0$$

$$\Delta = 49 - 36 = 13$$

$$x = \frac{-7 \pm \sqrt{13}}{2}$$

بدون جواب صحیح

$$\text{الف) } S^2 - 2R = ? \Rightarrow (-\frac{b}{a})^2 - 2(\frac{c}{a})$$

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

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

$$\text{ب) } S^3 - 3SP = (-\frac{b}{a})^3 - 3(-\frac{b}{a})(\frac{c}{a})$$

$$(\frac{3}{1})^3 - 3(3)(-2) = 9 + 18 = 27$$

$$\text{الف) } \begin{pmatrix} 7 \\ 5 \end{pmatrix} + \begin{pmatrix} 9 \\ 2 \end{pmatrix} = \frac{7 \times 9 \times 5 \times 2}{7 \times 5 \times 2 \times 1} + \frac{9 \times 1}{2 \times 1} = \frac{630}{2} + \frac{9}{2} = \frac{1260 + 9}{2} = \frac{1269}{2} = 634.5$$

$$\text{ب) } \begin{pmatrix} 9 \\ 3 \end{pmatrix} - \begin{pmatrix} 1 \\ 2 \end{pmatrix} = \frac{9 \times 1 \times 3 \times 2}{3 \times 1 \times 2 \times 1} - \frac{1 \times 3}{1 \times 1} = (18 \times 2) - (3 \times 1) = 36 - 3 = 33$$

$$\hookrightarrow V(18-3) = 33$$