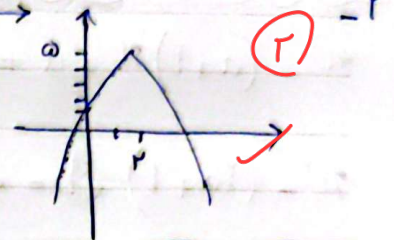
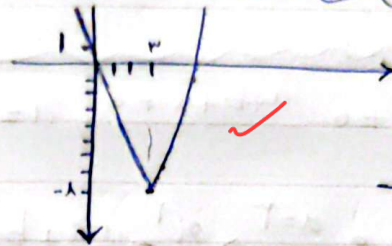


الف) $y = 2x^2 - 4x + 1 \rightarrow \min \left| \begin{matrix} -\frac{b}{2a} = \frac{2}{2} = 1 \\ -1 \end{matrix} \right| \rightarrow 2(1)^2 - 4(1) + 1 = -1 \checkmark$

ب) $y = -2x^2 + 4x - 1 \rightarrow \max \left| \begin{matrix} -\frac{b}{2a} = \frac{2}{-2} = -1 \\ -\frac{\Delta}{4a} = \frac{-4}{-8} = \frac{1}{2} \end{matrix} \right| \text{ دقت! } \quad (1, \frac{1}{2})$

الف) $y = x^2 - 2x + 1 \rightarrow \min \left| \begin{matrix} 1 \\ -1 \end{matrix} \right|$



ب) $y = -x^2 + 2x + 1 \rightarrow \max \left| \begin{matrix} 1 \\ 1 \end{matrix} \right|$

$fx^2 + Kx - 9x - 2 = 0 \rightarrow f(x-a)(x-b)^2 = f(x-a)(x^2 - 2Bx + B^2)$
 $\Rightarrow fx^2 - \lambda Bx^2 + fB^2x - fa x^2 + \lambda a Bx - fa B^2$
 $= fx^2 - (fa + \lambda B)x^2 + (fB^2 + \lambda a B)x - fa B^2$

$\hookrightarrow -faB^2 = -2aB = -2 \Rightarrow \lambda B = -2$

$a + B = 1 \xrightarrow{B = -\frac{2}{f}} a - \frac{1}{f} = 1 \Rightarrow a = \frac{a}{f}$

$\Rightarrow B = -\frac{1}{f}$

$K = -fa - \lambda B = -f \times \frac{a}{f} - \lambda \times \frac{-1}{f} = -a + 1 = -2 \checkmark$

$x^2 - 2mx + m = 0 \rightarrow \sqrt{a} - \sqrt{b} = 1 \Rightarrow \underbrace{a+b}_{2m} - 2\sqrt{ab} = 1$

$\Rightarrow 2m - 2\sqrt{m} = 1 \rightarrow 2m - \sqrt{2}m - 1 = 0 \Rightarrow \sqrt{m} = \frac{2 \pm \sqrt{19}}{2}$

$-\frac{1}{f} \times \dots$

$2x^2 - (m+2)x + m \rightarrow \Delta = m^2 + 4m + 4 - 4m = m^2 - 2m + 4 = (m-1)^2$

$\frac{2}{f} = \frac{1}{f} \times \frac{\sqrt{\Delta}}{|a|} \times m = \frac{1}{f} \times \frac{|m-2|}{2} \times m \rightarrow \frac{m^2 - 2m}{f} = \frac{2}{f} \Rightarrow m^2 - 2m - 2 = 0 \checkmark$

$m^2 - 2m - 2 = 0 \rightarrow (m-3)(m+1) = 0$
 $\frac{-m^2 + 2m}{f} = \frac{2}{f} \Rightarrow m^2 - 2m + 2 = 0 \times$
 $\Delta < 0$

$y \begin{cases} x^2 + x + 1 \rightarrow \frac{-b}{2a} = \frac{-1}{2} \\ x^2 - 2x + 1 \rightarrow \frac{-b}{2a} = \frac{2}{2} = 1 \end{cases} \checkmark$

$$y = ax^2 + 3x + a \rightarrow \frac{-\Delta}{2a} = \frac{y}{\lambda} \Rightarrow \frac{9 - 4a^2}{2a} = \frac{y}{\lambda} \quad (1, 7, 8) \cdot 9$$

$$\Rightarrow -7a = 1\lambda - \lambda a^2 \Rightarrow \lambda a^2 - \lambda a - 1\lambda = 0 \quad \text{عقود } a \text{ به نسبت با } \lambda \text{ min با } \lambda \text{ نسبت به } a$$

$$\hookrightarrow a^2 - Va - 1^2 = 0 \Rightarrow (a+1)(a-1) = 0 \rightarrow a \rightarrow 1 \checkmark$$

$$x^2 - (a+1)x + a = 0 \quad a+b+c=0 \rightarrow a=1, B \begin{cases} \rightarrow -1x \\ \rightarrow 3x \end{cases} \rightarrow (x-1)(x-3) = x^2 - 4x + 3 = 0 \quad a=3 \quad (2)$$

$$x^2 - (3a+1)x + b = 0 \quad a=3 \rightarrow x^2 - 10x + b = 0$$

$$z(z+r) = \frac{c}{a} \Rightarrow z^2 + rz = b \quad z+z+r = \frac{-b}{a} \Rightarrow z = 3$$

$$z(z+r) - aB \quad z=3, a=1, B=3 \rightarrow 3 \times 3 - 1 \times 3 = 6 \checkmark$$

$$y = -ax^2 + ax + r \rightarrow \frac{-b}{2a} = \frac{-a}{-2a} = \frac{1}{2} \quad \frac{-\Delta}{2a} = \frac{a}{2} + r \quad (2) \quad -1$$

$$y = 2bx^2 - bx - 1 \rightarrow \frac{-b}{2a} = \frac{b}{4b} = \frac{1}{4} \quad \frac{-\Delta}{2a} = \frac{-b}{2} - 1$$

$$2b \left(\frac{1}{4}\right)^2 - b \left(\frac{1}{4}\right) - 1 = \frac{a}{2} + r \Rightarrow \frac{a}{2} = -r \Rightarrow a = -12 \checkmark$$

$$12 \left(\frac{1}{4}\right)^2 - 12 \left(\frac{1}{4}\right) + r = \frac{-b}{2} - 1 \Rightarrow \frac{r}{2} = \frac{-b}{2} \Rightarrow -b = -6 \checkmark \quad b-a = (-6) - (-12) = 6 \checkmark$$

$$y = 2\omega ax^2 + 2x + B \rightarrow m(x-a)(x-B) = mx^2 - m(a+B)x + maB \quad (2) \quad -9$$

$$m = 2\omega a \quad -m(a+B) = r \quad maB = B \quad m = 2\omega a \rightarrow 2\omega a^2 = 1 \Rightarrow a = \pm \frac{1}{\omega} \Rightarrow m = \pm 2\omega$$

$$\pm 2\omega \left(\pm \frac{1}{\omega} + B\right) = r \Rightarrow \pm \frac{1}{\omega} + B = \mp \frac{r}{2\omega} \Rightarrow B \begin{cases} +1 \checkmark \\ -1 \end{cases} \quad B > a \rightarrow -1 > -\frac{1}{\omega} x$$

$\omega < 0, 2\omega a < 0, \frac{-r}{-2\omega} = \frac{-b}{2a} > 0$

$$x^2 - (a^2 + b^2 - 12)x + a + b - 1 = 0 \quad a+b = a^2 + b^2 - 12 \Rightarrow x^2 - (a^2 + b^2 - 12)x + a + b - 1 = 0$$

$$a+b+1=0 \rightarrow a=1, b = a^2 + b^2 - 12$$

$$a+b = a^2 + b^2 - 12 \quad a=1, (b-3)(b+3) = 0 \Rightarrow b \begin{cases} 3 \Rightarrow x^2 - \omega + r \Rightarrow a+b = \omega^2 + b^2 - 12 \checkmark \\ -3 \Rightarrow x^2 + r - 3x \rightarrow -3 \notin N \end{cases} \quad (2)$$

$$\sqrt{\alpha} - \sqrt{\beta} = 1 \xrightarrow{\text{تربيع}} \alpha + \beta - 2\sqrt{\alpha\beta} = 1 \rightarrow \cancel{8} - 2\sqrt{p} = 1$$

$$2\sqrt{m} - 2\sqrt{m} = 1$$

←

$$2\sqrt{m} - 2\sqrt{m} - 1 = 0 \xrightarrow{\sqrt{m} = t} 2t^2 - 2t - 1 = 0 \begin{cases} t = 1 \rightarrow \sqrt{m} = 1 \rightarrow m = 1 \\ t = \frac{-1}{2} \times \end{cases}$$

$$2x^2 - x - 1 = 0 \rightarrow p = \frac{c}{a} = \boxed{\frac{-1}{2}}$$