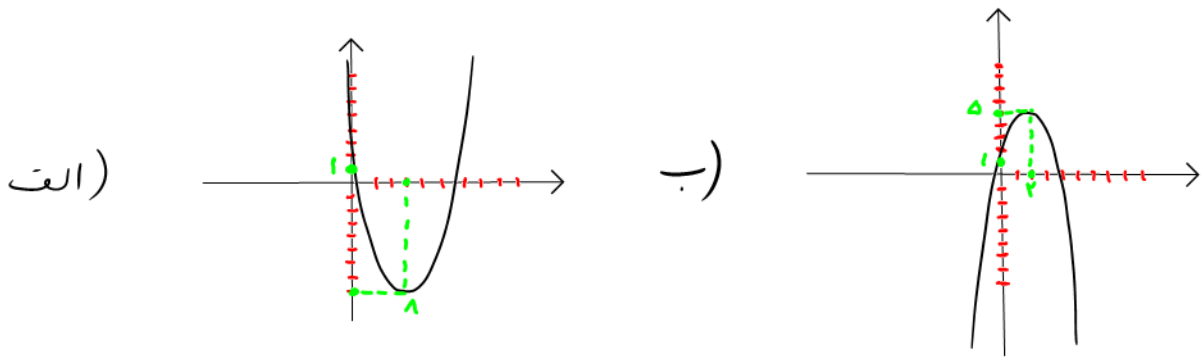


نام و نام خانوادگی ..... علی جمشیدی ..... پاسنامه تشریحی تکلیف شماره ۲۴ ..... کلاس ..... بیست و یک

الف)  $\text{ext}(\min) \begin{cases} x = -\frac{b}{2a} \rightarrow x_{\min} = \frac{1}{2} \\ y = -\frac{\sqrt{\Delta}}{2a} \rightarrow y_{\min} = -\frac{b^2 - 4ac}{4a} = -\frac{1}{4} = -1 \end{cases}$

ب)  $\text{ext}(\max) \begin{cases} x = -\frac{b}{2a} \rightarrow x_{\max} = 2 \\ y = -\frac{\sqrt{\Delta}}{2a} \rightarrow -\frac{b^2 - 4ac}{-4} = \frac{-31}{4} = -7.75 \end{cases}$

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$4x^2 + kx^2 - 9x - 2 = 0$

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$S = x_1 + x_2 = 3m, P = x_1 x_2 = m \quad |\sqrt{x_1} - \sqrt{x_2}| = 1$   
 $\downarrow$   
 $x_1 + x_2 - 2\sqrt{x_1 x_2} = 1 \Rightarrow 3m - 2\sqrt{m} = 1 \xrightarrow{t = \sqrt{m}} 3t^2 - 2t - 1 = 0$   
 $\downarrow$   
 $(3t+1)(t-1) = 0$   
 $\downarrow$   
 $t = 1 \rightarrow m = 1$   
 $\downarrow$   
 $-\frac{1}{3} \times \sqrt{m} \geq 0$   
 $2x^2 - mx - m = 0 \rightarrow P = \frac{c}{a} = -\frac{m}{2} = -\frac{1}{2} \leftarrow t=1, m=1$

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$y = 2x^2 - (m+2)x + m \xrightarrow{\substack{a+b+c=0 \\ y=0}} \begin{matrix} x_1 = 1 \\ x_2 = \frac{c}{a} = \frac{m}{2} \end{matrix} \xrightarrow{x=0} C \begin{bmatrix} 0 \\ m \end{bmatrix} \rightarrow \Delta \text{سویز: } A(1,0), B(\frac{m}{2},0), C(0,m)$   
 $S_{\Delta} = \frac{1}{2} \times |1 - \frac{m}{2}| \times |m| = \frac{m}{2} \Rightarrow |m(2-m)| = 3$   
 $\begin{cases} m(2-m) = -3 \Rightarrow m^2 - 2m - 3 = 0 \Rightarrow (m-3)(m+1) = 0 \rightarrow \begin{matrix} m=3 \\ m=-1 \end{matrix} \\ m(2-m) = 3 \rightarrow 2m - m^2 = 3 \Rightarrow m^2 - 2m + 3 = 0 \rightarrow \Delta < 0 \end{cases}$   
 $y = 2x^2 - mx + 1 \rightarrow \text{ext} \left\{ \begin{matrix} x = -\frac{b}{2a} = \frac{m}{4} = \begin{cases} \frac{3}{4} \\ -\frac{1}{4} \end{cases} \end{matrix} \right.$

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<p> <math>\min \Rightarrow a) \circ \rightarrow \text{ext} \left\{ \begin{aligned} y &amp;= \frac{b^2 - \epsilon ac}{\epsilon a} = \frac{\epsilon a^2 - 9}{\epsilon a} = \frac{v}{\lambda} \rightarrow \epsilon \lambda a = 1(\epsilon a^2 - 9) \Rightarrow \epsilon^2 a^2 - \epsilon \lambda a - v^2 = 0 \\ &amp;\Downarrow \\ &amp;\lambda a^2 - v a - 1 = 0 \\ &amp;\Downarrow \\ \Delta &amp;= b^2 - \epsilon ac = \epsilon^2 + 4v^2 = 4v^2 \end{aligned} \right.</math> </p> <p> <math>\rightarrow a = \frac{v \pm \sqrt{4v^2}}{2\epsilon} = \boxed{a = 2b} - \cancel{a = \frac{-9}{\lambda}} \quad a) \circ</math> </p>	6
<p> <math>x^2 - (a+1)x + a = 0 \Rightarrow (x-1)(x-a) = 0 \rightarrow \begin{cases} x=1 \\ x=a \end{cases}</math> <span style="color: red;">فرد متوالی</span> <math>a=1 + \epsilon = 3 \Rightarrow P_r = 3</math> </p> <p> <math>x^2 - (\epsilon a + 1)x + b = 0 \xrightarrow{a=3} x^2 - 1.0x + b = 0 \rightarrow S_r = 1.0</math> <span style="color: red;">وزع متوالی</span> <math>x_1 = \frac{1}{\epsilon} \rightarrow P_r = 2\epsilon</math> </p> <p style="text-align: right; color: red;"><math> P_r - P_l  = 21</math></p>	7
<p> <math>\text{ext}_l \left\{ \begin{aligned} x_1 &amp;= -\frac{b}{\epsilon a} = \frac{-a}{\epsilon(-a)} = \frac{1}{\epsilon} \\ y_1 &amp;= -a\left(\frac{1}{\epsilon}\right) + a\left(\frac{1}{\epsilon}\right) + \epsilon = \frac{a}{\epsilon} + \epsilon \end{aligned} \right.</math> </p> <p> <math>\text{ext}_r \left\{ \begin{aligned} x_r &amp;= \frac{b}{\epsilon b} = \frac{1}{\epsilon} \\ y_r &amp;= \epsilon b\left(\frac{1}{\epsilon}\right) - b\left(\frac{1}{\epsilon}\right) - 1 = -\frac{b}{\lambda} - 1 \end{aligned} \right.</math> </p> <p> <math>\frac{a}{\epsilon} + \epsilon = \epsilon b\left(\frac{1}{\epsilon}\right) - b\left(\frac{1}{\epsilon}\right) - 1 = -1 \Rightarrow a = -1\epsilon</math> </p> <p> <math>-\frac{b}{\lambda} - 1 = -a\left(\frac{1}{\epsilon}\right) + a\left(\frac{1}{\epsilon}\right) + \epsilon = \frac{\epsilon a}{1\epsilon} + \epsilon \xrightarrow{a=-1\epsilon} -\frac{b}{\lambda} - 1 = \frac{\epsilon(-1\epsilon)}{1\epsilon} + \epsilon = -\epsilon + \epsilon = 0 \Rightarrow -\frac{b}{\lambda} = 0, \forall \epsilon \Rightarrow b = -\epsilon</math> </p> <p> <math>b - a = -\epsilon - (-1\epsilon) = 0</math> </p>	8
<p> <math>\epsilon \Delta a x^2 + \epsilon x + \beta = 0 \quad P = \alpha\beta = \frac{c}{a} = \frac{\beta}{\epsilon \Delta a} \Rightarrow \alpha = \frac{1}{\epsilon \Delta a} \Rightarrow a = \frac{1}{\epsilon \Delta a} \quad S = \alpha + \beta = -\frac{b}{a} = -\frac{\epsilon}{a} = -\epsilon(\epsilon \Delta a) = -1 \dots \alpha</math> </p> <p style="text-align: right;"><math>\Downarrow</math> <math>\beta = -1 \cdot \alpha</math></p> <p> <math>\beta &gt; \alpha \rightarrow -1 \cdot \alpha &gt; \alpha \Rightarrow 1 \cdot \epsilon \alpha &lt; 0 \Rightarrow \alpha &lt; 0 \Rightarrow \alpha &lt; 0, \beta &gt; 0</math> </p> <p> <math>\text{ext} \left\{ \begin{aligned} \frac{-b}{\epsilon a} &amp;= \frac{-\epsilon}{\epsilon a} = -\frac{1}{a} \\ \epsilon \Delta a \left(\frac{-\epsilon}{\epsilon a}\right) + \epsilon \left(\frac{-\epsilon}{\epsilon a}\right) + \beta &amp;= \frac{\epsilon}{a} - \frac{1}{a} + \beta = \beta - \frac{1}{a} \xrightarrow{\alpha &lt; \beta &gt; 0} y_{\text{ext}} &gt; 0 \Rightarrow \text{درد است} </math></p>	9
<p> <math>S = a + b = a^2 + b^2 - 1\epsilon \Rightarrow a^2 + b^2 - (a+b) = 1\epsilon \quad P = \alpha b = a + b - 1 \Rightarrow ab - a - b + 1 = 0 \Rightarrow (a-1)(b-1) = 0</math> </p> <p style="text-align: right;"><math>\alpha = 1 \wedge b = 1</math></p> <p> <math>1^2 + b^2 - (1+b) = 1\epsilon \Rightarrow b^2 - b - 1\epsilon = 0 \Rightarrow (b-\epsilon)(b+\epsilon) = 0 \rightarrow \begin{cases} b = \epsilon \\ b = -\epsilon \end{cases} \quad b \in \mathbb{N}</math> </p> <p> <math>\Rightarrow a = 1 \Rightarrow a + b = 0</math> </p>	10