

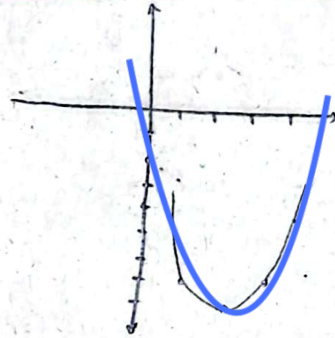
لیت انوری - دهم B ۱۷۵ آفرین

$$y = 2x^2 - 4x + 1 \rightarrow \text{ext} \left| \begin{array}{l} \frac{-b}{2a} = \frac{4}{4} = 1 \\ 2 \cdot 1 + 1 = 3 \end{array} \right. \xrightarrow{\text{Min}} (1, 3)$$

$$y = -2x^2 + 4x - 5 \rightarrow \text{ext} \left| \begin{array}{l} \frac{-b}{2a} = \frac{-4}{-4} = 1 \\ \frac{-9}{4} + \frac{16}{4} - \frac{20}{4} = \frac{-11}{4} \end{array} \right. \xrightarrow{\text{Max}} \left(1, -\frac{11}{4} \right)$$

الف) $y = x^2 - 4x + 1 \rightarrow \text{ext} \left| \begin{array}{l} \frac{-b}{2a} = \frac{4}{2} = 2 \\ 4 - 16 + 1 = -9 \end{array} \right. \xrightarrow{\text{Min}} (2, -9)$

x	y
1	-7
2	-9
3	-7

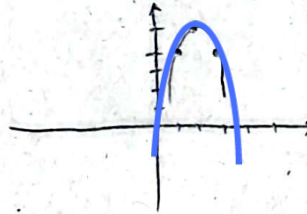


۱۷۵

سهی هار ادا من بکن!

ب) $y = -x^2 + 4x + 1 \rightarrow \text{ext} \left| \begin{array}{l} \frac{-b}{2a} = \frac{-4}{-2} = 2 \\ -4 + 16 + 1 = 13 \end{array} \right. \xrightarrow{\text{Max}} (2, 13)$

x	y
1	4
2	13
3	4



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

$$k = ? - 3$$

$$\alpha + \beta = 1 \rightarrow \alpha = 1 - \beta$$

$$\alpha\beta = -2 \rightarrow (1 - \beta)\beta = -2 \rightarrow \beta - \beta^2 = -2 \rightarrow \beta^2 - \beta - 2 = 0 \rightarrow (\beta - 2)(\beta + 1) = 0$$

$\rightarrow \beta = 2, \alpha = 1 - 2 = -1$
 $\rightarrow \beta = -1, \alpha = 1 - (-1) = 2$

$\beta = 2$ آفرین $\rightarrow 32 + 4k - 18 - 2 = 4k + 12 = 0 \rightarrow k = -3$
 $\beta = -1$ آفرین $\rightarrow -4 + k + 9 - 2 = 0 \rightarrow k = -3$

$$x^2 - 3mx + m = 0 \rightarrow S = 3m, P = m$$

$$(\sqrt{\alpha} - \sqrt{\beta} = 1)^2 \rightarrow \alpha + \beta - 2\sqrt{\alpha\beta} = 1 \rightarrow 3m - 2\sqrt{3m} - 1 = 0$$

$$\sqrt{3m} = t \rightarrow 3t^2 - 2t - 1 = 0 \rightarrow (t - 1)(t + 1) = 0$$

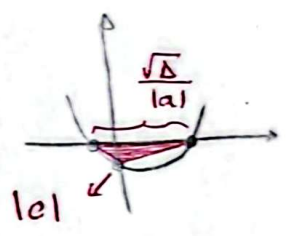
$\rightarrow t = 1 \rightarrow \sqrt{m} = \frac{1}{\sqrt{3}} = 1$
 $\rightarrow t = -1 \rightarrow \sqrt{m} = \frac{1}{\sqrt{3}}$

$$\rightarrow 2x^2 - mx - m = 0 \rightarrow \text{پایه} : \frac{-m}{2} = \frac{-1}{2}$$

$$y = 2x^2 - (m+2)x + m$$

-5

فاصله = $r_2 - r_1$ ارتفاع = $|m|$



یک مثلث قائم‌الزاویه می‌سازد
در شبیه‌سازی ۲ و ۲ در نظر می‌گیریم

$$(r_2 - r_1)^2 = (r_1 + r_2)^2 - 4r_1r_2$$

$$\downarrow |r_2 - r_1| = \sqrt{4r_1r_2 - (r_1 + r_2)^2} = \sqrt{4m - \left(\frac{m+2}{2}\right)^2} = \sqrt{\frac{4m - m^2 - 4 - 4m}{4}} = \sqrt{\frac{(m-2)^2}{4}}$$

$r_1r_2 = \frac{m}{2} \leftarrow \frac{c}{a} =$ ضرب
 $r_1 + r_2 = \frac{m+2}{2} \leftarrow \frac{-b}{a} =$ جمع

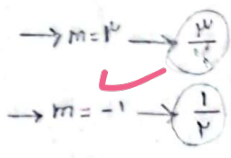
$$S = \frac{|m(m-2)|}{4} = \frac{3}{4} \Rightarrow |m(m-2)| = 3$$

$$\rightarrow m(m-2) = 3 \rightarrow m^2 - 2m - 3 = 0 \rightarrow m = 3, m = -1$$

$$\rightarrow m(m-2) = -3 \rightarrow m^2 - 2m + 3 = 0 \rightarrow \text{ریشه‌ها منفی می‌شوند}$$

$$y = x^2 - mx + 1$$

$$\frac{m}{2} =$$



$$y = ax^2 + 3x + a$$

-4

$$\frac{-A}{Fa} = \frac{V}{A} \rightarrow \frac{-9 + 3a^2}{3a} = \frac{V}{A} \rightarrow 2Aa = -V^2 + 3^2a^2 \rightarrow 3^2a^2 - 2Aa - V^2 = 0 \rightarrow 9a^2 - Va - 18 = 0$$

$$\rightarrow a_1 = \frac{V + 2A}{18} = 2$$

$$\rightarrow a_2 = \frac{V - 2A}{18} = \frac{-18}{18} = -1 \text{ از آنجا } \Rightarrow a = 2$$

$$x^2 - (a+1)x + a = 0 \xrightarrow{\text{ریشه‌ها عدد صحیح}} \frac{\sqrt{\Delta}}{|a|} = 2 \rightarrow \sqrt{\frac{(a+1)^2 - 4a}{(a-1)^2}} = 2 \rightarrow (a-1)^2 = 4$$

-3

$$(a-1-2)(a-1+2) = 0 \rightarrow (a-3)(a+1) = 0 \rightarrow a = -1 \rightarrow \text{از آنجا } \rightarrow x^2 - 1 = 0 \rightarrow x = \pm 1$$

$$x^2 - (3a+1)x + b = 0 \xrightarrow{\text{ریشه‌ها عدد صحیح}} \frac{\sqrt{\Delta}}{|a|} = 2 \rightarrow \sqrt{100 - 4b} = 2 \rightarrow 100 - 4b = 4 \rightarrow 4b = 96 \rightarrow b = 24$$

$P_2 = b = 24$

$$\text{فاصله دو نقطه} = |P_2 - P_1| = |24 - 3| = 21$$

$$y = -ax^r + ax + 1 \rightarrow S \begin{cases} -a = 1 \\ -ra = 1 \end{cases}$$

$$y' = 1bx^r - bx - 1$$

$$b-a = ? \rightarrow S' \begin{cases} \frac{ab}{rb} = \frac{1}{r} \\ \frac{b}{\Lambda} - \frac{rb}{\Lambda} - \frac{\Lambda}{\Lambda} = \frac{-b-\Lambda}{\Lambda} \end{cases}$$

$$\xrightarrow{y, S \text{ (1) (2)}} \frac{-b-\Lambda}{\Lambda} = \frac{-a}{1r} + \frac{ra}{1r} + \frac{1r}{1r} = \frac{-rb-\Lambda}{1r} = \frac{ra+1r}{1r} \rightarrow ra+rb = -r\Lambda \rightarrow -r\Lambda+rb = -r\Lambda$$

$$\xrightarrow{y, S \text{ (1) (2)}} \frac{a+\Lambda}{r} = \frac{b}{r} - \frac{b}{r} - 1 \rightarrow a+\Lambda = -r \rightarrow a = -1r$$

$rb = -r\Lambda \rightarrow b = -\Lambda$

$\Rightarrow b-a = -r+1r = 0$

$$y = r\omega a x^r + r\alpha + \beta$$

$$\beta > \alpha$$

$$\begin{cases} r\omega a^r + r\alpha + \beta = 0 \rightarrow * \\ r\omega a\beta^r + r\beta + \beta = 0 \rightarrow \omega\beta(\omega a\beta + 1) = 0 \end{cases}$$

$\beta = 0 \rightarrow \omega a\beta = -1 \rightarrow \omega a\beta = -1 \rightarrow \alpha\beta = -1 \rightarrow \alpha = -\frac{1}{\beta} = -\frac{1}{\omega a}$

$\Rightarrow -1 = \frac{\beta}{\omega a} \Rightarrow \beta = -\omega a$

* $\beta = -\omega a \rightarrow r\omega a^r + r\alpha - \omega a = r\omega a^r - \alpha = \alpha(r\omega a^r - 1) = \alpha(\omega a - 1)(\omega a + 1) = 0 \rightarrow \alpha = 0 \text{ or } \omega a = 1$

$$\Rightarrow y = -\omega x^r + r\alpha + 1 \rightarrow S \begin{cases} -\omega = 1 \\ 1, \Lambda \end{cases}$$

استعملنا ✓

$\alpha = \frac{1}{\omega}, \beta = -1$
 $\alpha = -\frac{1}{\omega}, \beta = 1$

$$x^r - (a^r + b^r - 1r)x + a + b - 1 = 0$$

$$S = a^r + b^r - 1r = S^r - rP - 1r \rightarrow$$

$$= S^r - rS - r - 1r = S^r - rS - 1r = S \rightarrow$$

$$S^r - rS - 1r = 0 \rightarrow (S-a)(S+r) = 0$$

$\Rightarrow a+b \rightarrow \begin{matrix} \omega \\ -r \end{matrix}$ ✓

α, β عدد طبيعي متين جوارنا $-r$ - متين