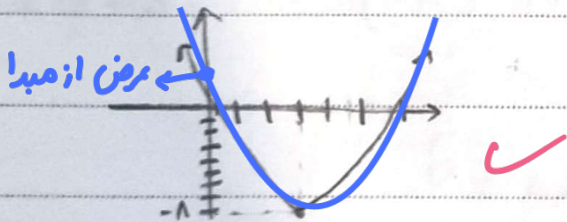


الف) $a > 0$ U_{min} ext | $x = -\frac{b}{2a} = \frac{1}{2} = 1$ مسئله
 $y = 2 \times 1^2 - 4(1) + 1 = -1$

ب) $a < 0$ U_{max} ext | $x = -\frac{b}{2a} = \frac{-3}{-2} = \frac{3}{2}$ Ⓟ
 $y(\frac{3}{2}) = -2(\frac{9}{4}) + 3(\frac{3}{2}) - 5 = -\frac{11}{2}$

الف) $a > 0$ U_{min} ext | $-\frac{b}{2a} = \frac{9}{2} = 4.5$ مسئله
 $9 - 18 + 1 = -8 = y$

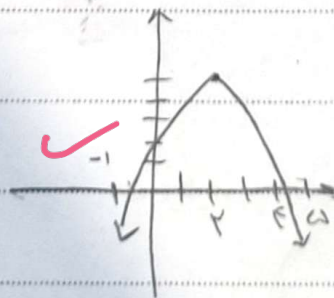
$\Delta = b^2 - 4ac = 36 - 4(1) = 32$ $x = \frac{9 \pm \sqrt{32}}{2} = \frac{9 \pm 4\sqrt{2}}{2}$
 $\begin{cases} x_1 = \frac{9 - 4\sqrt{2}}{2} \\ x_2 = \frac{9 + 4\sqrt{2}}{2} \end{cases}$



ب) $a < 0$ U_{max} ext | $-\frac{b}{2a} = 2$ Ⓟ
 $-5 + 1 + 1 = -3$

$\Delta = b^2 - 4ac = 14 - 4(-1) = 18$ $x = \frac{-4 \pm \sqrt{18}}{-2} = \frac{-4 \pm 3\sqrt{2}}{-2}$

$\begin{cases} x_1 = \frac{-4 + 3\sqrt{2}}{-2} \\ x_2 = \frac{-4 - 3\sqrt{2}}{-2} \end{cases}$



Subject: ()

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$$x^2 - (\alpha + \beta)x + \beta\alpha = 0 \rightarrow x^2 - x - 2 = 0 \rightarrow (x-2)(x+1) \quad \text{سؤال ٣}$$

$$\alpha = 2 \quad \beta = -1$$

$$\alpha = 2 \rightarrow f(x)^2 + k(x)^2 - 9(x) - 2 = 0 \Rightarrow 4x^2 + kx^2 - 9x - 2 = 0 \quad f(x) = -12$$

$$k = -3 \quad \checkmark$$

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سؤال ٤

$$x^2 - 2mx + m = 0 \quad \alpha, \beta \quad \alpha + \beta = 2m \quad \alpha\beta = m \quad |\sqrt{\alpha} - \sqrt{\beta}| = 1 \Rightarrow$$

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

$$2m - 2\sqrt{m} - 1 = 0 \quad (t = \sqrt{m}) \rightarrow 2t^2 - 2t - 1 = 0 \rightarrow \Delta = 4 - 4(-1)(2) = 16$$

$$\rightarrow m = \frac{2 \pm 2}{4} \rightarrow \frac{1}{2} \quad \checkmark$$

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$$2x^2 - mx - m = 0 \quad m=1 \rightarrow 2x^2 - x - 1 = 0 \rightarrow \Delta = 1 - 4(-1)(2) = 9$$

$$x = \frac{1 \pm 3}{4} \rightarrow \frac{1}{4} \quad \checkmark$$

$$0 = mx^2 - (m+r)x + m \quad a+b+c=0 \quad m=1/m_r \quad \text{سؤال ٥}$$

$$S = \frac{r}{m} \quad S = \frac{1}{m} |m(\frac{m}{r}-1)| \rightarrow |m(\frac{m}{r}-1)| = \frac{r}{m} \Rightarrow$$

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$$|m(m-r)| = r \quad \begin{cases} m = -1 \rightarrow m_r = -\frac{1}{r} \\ m = 2 \rightarrow m_r = \frac{r}{2} \end{cases} \leftarrow y = ax^2 - mx + 1 \rightarrow \frac{b}{ra} = \frac{r}{a}$$

$$y = ax^2 + 2m + a \quad \min a > 0 \quad \text{ext} \quad \frac{b}{ra} = \frac{r}{a} \quad \frac{-\Delta}{ra} = \frac{-9 + 4a^2}{4a} = \frac{r}{a}$$

Arman

$$1ax^2 - va - 1a = 0 \quad \Delta = 49 - 4(1)(-1) = 49$$

$$a = \frac{v \pm 7a}{14} \rightarrow \frac{r}{a} \quad \checkmark$$

$$a = 2 \quad \checkmark$$

$$n^r - (a+1)n + a = 0 \rightarrow a+b+c = 0 \rightarrow 1$$

سوال ۲

$$r_{n+1} = r(r_{n+1}) = a$$

$$n^r - (ra+1)n + b = 0 \quad a=r \quad n^r - 1n + b = 0 \rightarrow rK+r$$

$$m_1 + m_2 = rK + r \quad m_1 = r \quad m_2 = r$$

$$rK+r = (ra+1) \Rightarrow K=r$$

$$(r \times r) - (1 \times r) = r$$

$$y = -an^r + an + r \quad \text{ext} \quad \frac{-b}{ra} = \frac{1}{r} = n$$

سوال ۱

$$y = -a\left(\frac{1}{r}\right) + a\left(\frac{1}{r}\right) + r = \frac{a}{r} + r$$

$$y = rbx^r - bx - 1 \quad n = \frac{1}{r} \quad \frac{a}{r} + r = rb\left(\frac{1}{r}\right)^r - b\left(\frac{1}{r}\right) - 1$$

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$$y = \frac{a}{r} + r \quad \frac{a}{r} + r = -1$$

$$a+b = -1r \quad \frac{a}{r} = -r \quad a = -1r$$

$$b = -1r - a \quad b - a = -1r - a - a$$

$$1r = -1r - 2a$$

↘ -1r

$$y = ra \alpha n^r + \epsilon n + \beta \quad \beta > \alpha \quad \beta + \alpha = \frac{-b}{a} = \frac{-r}{ra}$$

سوال ۲

$$\alpha \beta = \frac{r}{ra \alpha} \quad \alpha^r = \frac{1}{ra} \quad \alpha = \pm \frac{1}{a}$$

$$n = \alpha = r \alpha \times \frac{1}{ra} + r \alpha + \beta = \dots \quad a \alpha + \beta = \dots \quad \beta = -a \alpha$$

$$\alpha = \frac{1}{a} \quad \beta = 1$$

$$-an^r + \epsilon n + 1 \quad \text{ext} \quad \frac{-b}{ra} = \frac{-r}{r(ra \alpha)} = \frac{-r}{ra \alpha} = \frac{1}{a}$$

$$y = \frac{1}{a}$$

موتو سوال ۲

Arman

$$a^r + b^r - 1^r = a + b \quad a + b - 1 = ab$$

$$a^r + b^r = (a+b)^r - r ab \rightarrow \frac{(a+b)^r}{t} - r \frac{(a+b-1)}{t} = \frac{a+b}{t}$$

$$t^r - r t - 1 = 0 \rightarrow (t-1)(t+r) \quad t = a+b = \Delta \quad \text{1,5} \quad -r$$

$$a^r + b^r - 1^r = a + b \rightarrow s^r - r p - 1^r = s \quad \underline{1.0}$$

$$a + b - 1 = ab \rightarrow s - 1 = p \rightarrow s^r - r s + r - 1^r - s = 0$$

$$s^r - r s - 1 = 0 \rightarrow (s - \Delta)(s + r) = 0$$

$$\downarrow$$

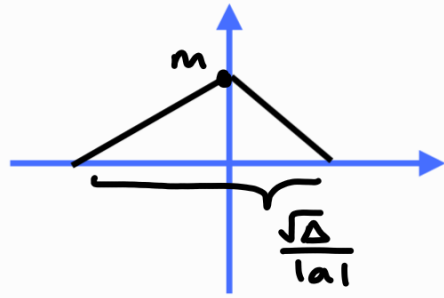
$$\checkmark s = \Delta$$

$$\downarrow$$

$$s = -r$$

ب.ا. اعداد طبیعی هستند!

$$S = \frac{1}{r} \times m \times \frac{\sqrt{m^2 + r^2 - rm}}{r} = \left| \frac{\mu}{r} \right|$$



5

$$m|m-r| = |\mu| \rightarrow \begin{cases} m|m-r| = \mu & 1 \\ m|m-r| = -\mu & 2 \end{cases}$$

1

$$m \geq r \rightarrow m^2 - rm - \mu = 0 \rightarrow m = r$$

if $m < r \rightarrow \Delta < 0$ غَيْرَ

2

$$m \leq r \rightarrow -m^2 + rm + \mu = 0 \rightarrow m = -1$$

if $m > r \rightarrow \Delta < 0$ غَيْرَ

$$m = r \rightarrow y = \mu + \mu n + r \rightarrow \mu S = \frac{-\mu}{r}$$

$$m = -1 \rightarrow y = \mu - \mu + r \rightarrow \mu S = -\frac{1}{r}$$

$$y = -an^r + an + r \rightarrow S\left(\frac{1}{r}, \frac{a}{r} + r\right)$$

$$y = r - an^r - bn - 1 \rightarrow S\left(\frac{1}{r}, -\frac{b}{r} - 1\right)$$

1

$$r b\left(\frac{1}{r}\right) - b\left(\frac{1}{r}\right) - 1 = \frac{a}{r} + r \rightarrow \frac{a}{r} = -r \rightarrow a = -1r$$

$$-a\left(\frac{1}{r}\right) + a\left(\frac{1}{r}\right) + r = -\frac{b}{r} - 1 \rightarrow -\frac{r}{r} - r + r = -\frac{b}{r} - 1 \rightarrow b = -4$$

$$b - a = -4 - (-1r) = 4$$