

الف) $a > 0$ U_{min} ext | $x = \frac{-b}{2a} = \frac{-1}{2} = -\frac{1}{2}$ مسئله

$y = 2x^2 - 4x + 1 = -1$

ب) $a < 0$ U_{max} ext | $x = \frac{-b}{2a} = \frac{-3}{-2} = \frac{3}{2}$

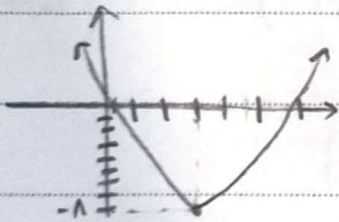
$y(\frac{3}{2}) = -2(\frac{9}{4}) + 3(\frac{3}{2}) - 5 = -\frac{11}{2}$

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

$9 - 18 + 1 = -8 = y$

$\Delta = b^2 - 4ac = 36 - 4(1) = 32$ $x = \frac{9 \pm \sqrt{32}}{2} = \frac{9 \pm 4\sqrt{2}}{2}$

$\frac{9 - 4\sqrt{2}}{2}$
 $\frac{9 + 4\sqrt{2}}{2}$

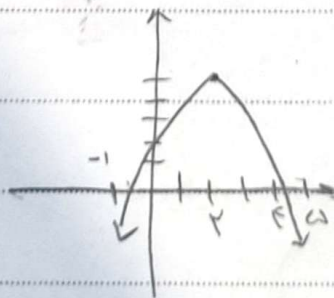


ب) $a < 0$ U_{max} ext | $\frac{-b}{2a} = 2$

$-4 + 8 + 1 = 5$

$\Delta = b^2 - 4ac = 16 - 4(-1) = 20$ $x = \frac{-4 \pm \sqrt{20}}{-2} = \frac{-4 \pm 2\sqrt{5}}{-2}$

$x_1 = \frac{-4 + 2\sqrt{5}}{-2} = 2 - \sqrt{5}$
 $x_2 = \frac{-4 - 2\sqrt{5}}{-2} = 2 + \sqrt{5}$



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

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

$$\alpha = r \rightarrow f(x)^m + k(x)^r - q(x) - r = 0 \Rightarrow r^m + r^k - 1 - r = 0 \quad f^k = -1^r$$

$$k = -r$$

سؤال ٤

$$x^r - rmx + m = 0 \quad \alpha, \beta \quad \alpha + \beta = rm \quad \alpha\beta = m \quad |\sqrt{\alpha} - \sqrt{\beta}| = 1 \Rightarrow$$

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

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

$$\rightarrow m = \frac{r \pm 4}{4} \quad \begin{matrix} \rightarrow -\frac{1}{r} \lambda \\ \rightarrow 1 \checkmark \end{matrix}$$

$$r m^r - m - m = 0 \quad \xrightarrow{m=1} \quad r m^r - m - 1 = 0 \rightarrow \Delta = 1 - 4(-1)(r) = 9$$

$$m = \frac{-1 \pm 3}{r} \quad \begin{matrix} \rightarrow -\frac{1}{r} \\ \rightarrow 1 \end{matrix}$$

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

$$S = \frac{r}{r}$$

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

$$|m(m-r)| = r \quad \begin{cases} m = -1 \rightarrow m^r = -\frac{1}{r} \\ m = r \rightarrow m^r = \frac{r}{r} \end{cases} \quad \leftarrow y = am^r - mm + 1 \rightarrow \frac{b}{ra} = 9$$

$$y = am^r + rm + a$$

min a > 0

$$\text{ext} \quad \frac{b}{ra} = \frac{r}{ra}$$

$$\frac{-\Delta}{ra} = \frac{-9 + 4ar}{ra} = \frac{r}{a}$$

$$1a^r - va - 1a = 0$$

$$\Delta = 49 - 4(1)(-1) = 49$$

$$a = \frac{v \pm 7a}{14} \quad \begin{matrix} \rightarrow (r) a \\ \rightarrow -\frac{9}{a} \end{matrix}$$

$$a = r \quad \checkmark$$

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

سوال ۲

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

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

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

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

$$y = -an^r + an + r \quad \text{ext} \quad \frac{-b}{ra} = \frac{1}{r} = n \quad \text{سوال ۱}$$

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

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

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

$$a+b = -1r$$

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

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

$$1r = -1r - 2a \rightarrow -1r$$

$$y = ra \alpha n^r + \epsilon n + \beta \quad \beta > \alpha \quad \beta + \alpha = \frac{-b}{a} = \frac{-r}{ra} \quad \text{سوال ۲}$$

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

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

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

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

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

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محل سوال ۲

سوال ۱.

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

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

$$t^r - r t - 1 = 0 \rightarrow (t - 1)(t + r) \quad t = a + b = \sqrt[r]{-r}$$

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