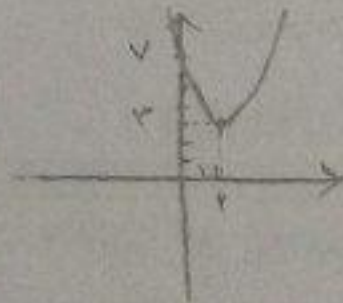


الف) $\left| \frac{-b}{2a} \right| \leq \frac{2}{3} \leq 2$

min $-4 + 8 - 1 = 3$



ب) $\left| \frac{-b}{2a} \right| \leq \frac{-2}{-2} \leq 2$

Max $-4 + 8 - 1 = 3$



الف) $\Delta > 0 \rightarrow m^2 + 2m + 1 - 5m - 14 > 0 \rightarrow m^2 - 3m - 13 > 0$
 $\frac{-3}{+} \frac{-13}{-} \frac{+}{+}$ $\rightarrow (-\infty, -2) \cup (5, +\infty)$
 ب) $\Delta \leq 0 \rightarrow m^2 - 3m - 13 \leq 0 \rightarrow m \in \{-2, 5\}$
 ج) $\Delta < 0 \rightarrow m^2 - 3m - 13 < 0 \rightarrow m \in (-2, 5)$
 د) $\Delta \geq 0 \rightarrow m \in (-\infty, -2] \cup [5, +\infty)$

الف) $\Delta > 0 \rightarrow 4(m^2 + 2m + 1) - 4(m^2 - 5m + 4) > 0 \rightarrow m^2 - 8m + 21 > 0$

$P > 0 \rightarrow \frac{10}{m-2} > 0 \rightarrow m > 2$

$S < 0 \rightarrow \frac{2m+2}{m-2} < 0 \rightarrow \frac{-1}{+} \frac{2}{-} \frac{+}{+} \rightarrow -1 < m < 2$

ح) $\Rightarrow$ هر دو درستی داشته باشند $\Rightarrow \emptyset$

ب) $\Delta > 0 \rightarrow m^2 - 8m + 21 > 0 \rightarrow \Delta > 0$ معادله

$P < 0 \rightarrow \frac{10}{m-2} > 0 \rightarrow m < 2$

$S < 0 \rightarrow \frac{2m+2}{m-2} > 0 \rightarrow -1 < m < 2$ (منتهی الف)

$\Rightarrow (-1, 2) \rightarrow -1 < m < 2$

ریشه ندارد
 $\Delta < 0 \rightarrow 16 - 4(21) < 0$
 چون $a > 0$ معادله مثبت است

الف) $\Delta = m^2 - 4m + 4 > 0 \rightarrow \Delta > 0$ هو

ب) $\frac{1}{m-2} < 0 \rightarrow \frac{2}{-1+} \rightarrow m \in (-\infty, 2)$

ب) $\frac{-b}{2a} = -2 \rightarrow \frac{X(m+1)}{X(m-2)} = -2 \rightarrow m+1 = -2m+4 \rightarrow m=1$

$\Delta \geq 0 \rightarrow \sin^2 \alpha - (2x^{\frac{1}{2}} + \frac{1}{x}) \geq 0 \rightarrow \sin^2 \alpha \geq 2x^{\frac{1}{2}} + \frac{1}{x}$

$\Rightarrow \sin^2 \alpha \leq 1 \rightarrow \sin \alpha \leq 1$
 $\rightarrow \sin \alpha \geq -1$
 $\Rightarrow \sin \alpha \in [-1, 1]$

$x^2 - 2x - 1 \rightarrow 1, \frac{c}{a} \rightarrow x, s, x \in [-1, 1]$
 $x^2 - 3x - 4 \rightarrow -1, -\frac{c}{a} \rightarrow x, s, x \in [-1, 1]$

$\rightarrow -4x^2 + 13x + 4$ is a parabola $\rightarrow \frac{-\Delta}{4a} = \frac{-(149 - (2 \times 4 \times (-9)))}{-16} = \frac{219}{16}$

$$m\alpha^2 - (m+r)\alpha - r s_0 \rightarrow s_0 = \frac{m+r}{m}, p_0 = \frac{-r}{m}$$

$$rS = \Delta p + v \rightarrow \frac{r(m+r)}{m} = \frac{-10}{m} + v \rightarrow -10ms - \epsilon m^2 + 4m \rightarrow \epsilon m^2 - 14ms_0$$

$$ms_0 \neq s_0 = \frac{4}{\epsilon} s_0, p_0 = -\frac{r}{\epsilon} s_0 = -\frac{1}{\epsilon}$$

$$\alpha^2 + \beta^2 = s^2 - rP = \frac{9}{\epsilon} + \frac{r}{\epsilon} s = \frac{14}{\epsilon}$$

مقادیر مختلفی می‌تواند داشته باشد و خواصش را دارد. $\times ms_0 \rightarrow ms_0$

$$p_0 = \alpha\beta s_0 \rightarrow \beta = \frac{r}{\alpha} \Rightarrow \frac{\epsilon\alpha}{\alpha\beta^2} + \frac{\beta^2}{\alpha\beta^2} = \frac{\epsilon\alpha}{\alpha(\frac{r}{\alpha})^2} + \frac{\beta^2}{\alpha} = \frac{\alpha^2 + \beta^2}{\alpha} = \frac{s^2 - rP}{\alpha} = 14$$

$$\begin{cases} x^2 \leq a + 2b \leq 10 \\ x^2 \leq 9a - 4b \leq 0 \end{cases} \rightarrow \begin{cases} 12a + 4b \leq 20 \\ 12a - 4b \leq 0 \end{cases}$$

$r_0 a \leq r_0 \Rightarrow a \leq 1, b \leq r \Rightarrow x^2 + rx + r = y, \quad \frac{r}{4a} \rightarrow \frac{r}{4} s_0$

$$y \leq rx^2 + (m+1)x + m+4 = x \rightarrow rx^2 + mx + m+4 \leq 0$$

$$\Delta \leq 0 \rightarrow m^2 - (4xrx(m+4)) \leq 0 \rightarrow m^2 - 4m - 4x \leq 0 \rightarrow (m-1)(m+4) \leq 0$$

$$\rightarrow rx^2 + 14x + 14 \rightarrow 149 - 122 = 27$$

$$\begin{aligned} & 12 \checkmark \quad -4 \checkmark \\ & \times \quad \checkmark \\ & \rightarrow rx^2 - rx + r \leq 0 \\ & 9 - (4xrxr) \leq 9 - 14 = -5 \times \end{aligned}$$