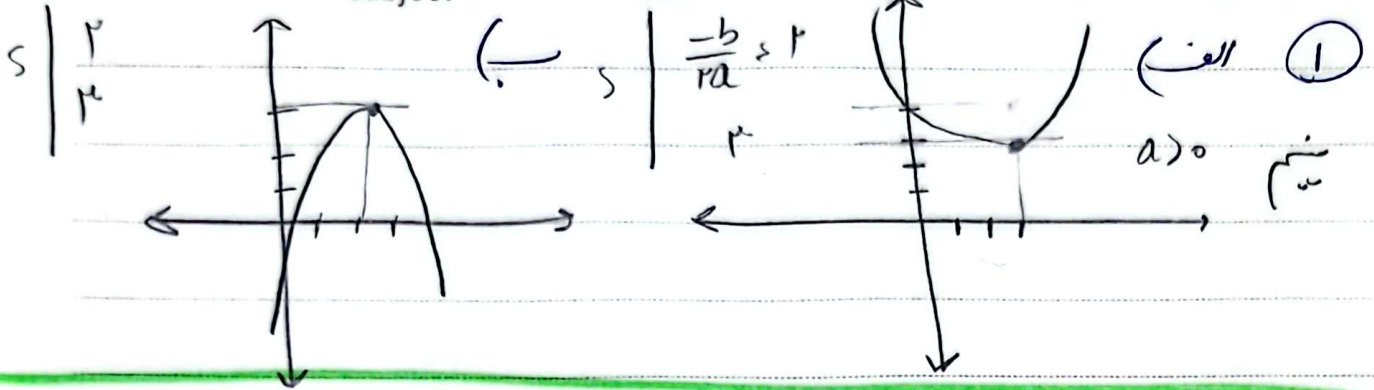


subject



(۲) الف) $\Delta \geq 0$ $\Delta = b^2 - 4ac = 4 - 4(1)(m+1) \geq 0$
 $(m+1)^2 - 2(1)(\frac{1}{2}m+2) \leq m^2 - 2m - 1 \geq 0 \rightarrow \Delta = (-1) \times 1 = 1$
 $\frac{-3}{+} \frac{\omega}{-}$ $\frac{\omega}{-}$ $\frac{2 \pm \sqrt{45}}{2}$
 $\rightarrow (-\infty, -3) \cup (\omega, +\infty)$

ب) $m \in \{-3, \omega\}$ $m^2 - 2m - 1 \geq 0$ $\Delta \geq 0$
 ج) $m \in (-3, \omega)$ $m^2 - 2m - 1 < 0$ $\Delta < 0$
 د) $m \in (-\infty, -3) \cup (\omega, +\infty)$ $m^2 - 2m - 1 \geq 0$ $\Delta \geq 0$

(۳) الف) $\frac{c}{a} < 0$ $\Delta > 0$ $\frac{-b}{a} < 0$
 $y = (x-2)x^2 - 2(m+1)x + 10$
 $\Delta > 0 \rightarrow (-2m-2)^2 - 4(1)(10) \geq 2m^2 + 8m + 2 - 40m + 10 \geq 0$
 $2m^2 - 32m + 12 \geq 0 \rightarrow \frac{-1}{+} \frac{2}{-}$ $m \in (-1, 2)$

ب) $m \in (-1, 2)$ $m^2 - 11m + 12 < 0$ $\Delta < 0$ $\frac{c}{a} < 0$

ج) $\frac{-b}{a} < 0 \rightarrow \frac{2m+2}{m-2} < 0$ $\frac{-1}{+} \frac{2}{-}$ $m \in (-1, 2)$

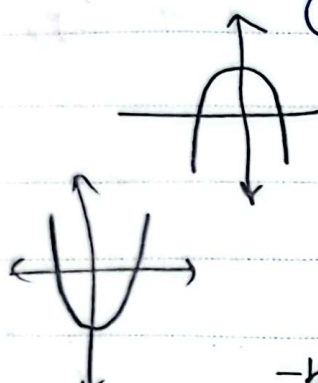
د) $\frac{c}{a} > 0 \rightarrow \frac{1}{m-2} > 0$ $\frac{1}{-}$ $m \in (2, +\infty)$

subject

$$\frac{c}{a} > 0 \rightarrow \frac{2}{-f+} \rightarrow m \in (-\infty, 2) \quad \left. \begin{array}{l} \frac{-b}{a} < 0 \rightarrow \frac{-1}{+f-} \rightarrow m \in (-1, 2) \end{array} \right\} \begin{array}{l} \text{تکرار ۱، ۲} \\ m \in (-1, 2) \end{array}$$

۴) ریشه‌های مختلف علامت $\Delta > 0$ و $P < 0$ (الف)

مع $\Delta > 0$ - a, s - مشخص است: $P < 0$



$$\frac{c}{a} < 0 \rightarrow \frac{2}{-f+} + \frac{10}{m-2} < 0 \quad m \in (-\infty, 2) \quad m < 2$$

$$\frac{-b}{2a} \leq -2 \rightarrow \frac{2m+2}{2m-2} \leq -2 \rightarrow -2m+4 \leq 2m+2 \rightarrow 4m \leq 2 \rightarrow m \leq \frac{1}{2}$$

۵) $\Delta > 0$

$$\frac{2x^2}{3} - (r \sin \alpha)x + \frac{r}{3} \leq 0 \rightarrow r \sin^2 \alpha - 2 \geq 0 \rightarrow r \sin^2 \alpha \geq 2 \rightarrow \sin^2 \alpha \geq \frac{2}{r}$$

۱) $\sin \alpha \leq -1 \rightarrow \frac{2x^2}{3} + rx + \frac{r}{3} \leq 0 \rightarrow 2 - 2(\frac{r}{3})(\frac{r}{3}) \leq 0 \rightarrow 2x^2 - 2 \leq 0$

۲) $\sin \alpha \leq 1 \rightarrow \frac{2x^2}{3} - rx + \frac{r}{3} \leq 0 \rightarrow 2 - 2(\frac{r}{3})(\frac{r}{3}) \leq 0 \rightarrow \frac{r}{3} \leq 0$

۶)

$$2x^2 - 2x - 1 \rightarrow x \leq 1, x \leq \frac{-c}{a} \leq -\frac{1}{2}$$

$$2x^2 - 2x - a \rightarrow x \leq -1, x \leq \frac{a}{2}$$

$$f = \frac{(x-1)(x+\frac{1}{2})(x+1)(x-\frac{a}{2})}{(1-x)(1+x)} \leq - \frac{(x+\frac{1}{2})(x-\frac{a}{2})}{1} \rightarrow x \neq \pm 1$$

subject

$$y = -x^r + \frac{14}{5}x + \frac{\omega}{5} \quad \Delta = \left(\frac{14}{5}\right)^r - \Sigma(-1)\left(\frac{\omega}{5}\right) = \frac{-149 - 110}{54} = \frac{-259}{54}$$

$$\frac{-259}{54} = \frac{149}{122} \quad \text{sg} \leftarrow$$

$$\frac{-2}{1}$$

$$mx^r - (m+r)x - r = 0 \quad s = \frac{m+r}{m}$$

$$p = \frac{-r}{m} \quad \left\{ \begin{array}{l} \mu\left(\frac{m+r}{m}\right) \omega\left(\frac{-r}{m}\right) + v \end{array} \right. \quad \checkmark$$

$$\frac{r(m+r)}{m} = \frac{-10 + \sqrt{m}}{m} \rightarrow r(m+r) = -10 + \sqrt{m} \rightarrow m \leq 1$$

$$m \neq 0 \quad \leftarrow$$

$$\frac{c}{a} s = \frac{-1}{r} \quad \left\{ \begin{array}{l} \frac{r}{r} s = \frac{-b}{a} \end{array} \right. \quad \leftarrow$$

$$(\alpha + \beta)^r = s^r - rp \rightarrow \left(\frac{r}{r}\right)^r - r\left(\frac{-1}{r}\right) = \frac{14}{5}$$

$$x^r - \omega x + r = 0 \rightarrow \frac{-b}{a} = \alpha \rightarrow \alpha + \beta = a \quad \alpha = \omega - \beta \quad \text{B1}$$

$$\beta^r - \omega \beta + r = 0 \rightarrow \beta^r = \omega \beta - r \rightarrow \beta^2 = (-r + \omega \beta)^r =$$

$$r \omega \beta^r - r \omega \beta + \Sigma \beta^r (\omega \beta - r) \quad r \omega (\omega \beta - r) - r \omega \beta + \Sigma = 0$$

$$1 r \omega \beta - \omega \omega - r \omega \beta + \Sigma = 0$$

$$L \quad \beta^2 = 10 \omega \beta - \Sigma \quad \times \beta$$

$$\beta^3 = 10 \omega \beta^2 \rightarrow \beta^3 = 10 \omega (\omega \beta - r) - \Sigma \beta \rightarrow$$

$$\beta^3 = \Sigma \sqrt{9} \beta - r 10 \quad \frac{r \alpha + \beta \omega}{\omega \beta^r} \quad \frac{\Sigma (\omega - \beta) + \Sigma \sqrt{9} \beta - r 10}{\omega (\omega \beta - r)}$$

$$19 \leq \frac{19(r \omega \beta - 10)}{r \omega \beta - 10} \leq \frac{r \omega \beta - 190}{r \omega \beta - 10} \quad \leftarrow$$

(9)

$$\left. \begin{array}{l} ax^2 + bx + c \\ r + 10 \end{array} \right\} \begin{array}{l} -(9a - 4b + c_5 \varepsilon) \\ ra + rb + c_5 \varepsilon_2 \end{array} \quad \begin{array}{l} -9a + 4b \leq 10 \\ 9a - 4b \leq 0 \end{array}$$

$$b \leq ra \quad \leftarrow \quad 9a - 4b \leq 0$$

$$\frac{85-b}{ra} = \frac{-v/10}{r(r/10)} = \frac{-r}{r}$$

$$ra \leq 10 \rightarrow a \leq r/10$$

$$b \leq \leftarrow b \leq v/10$$

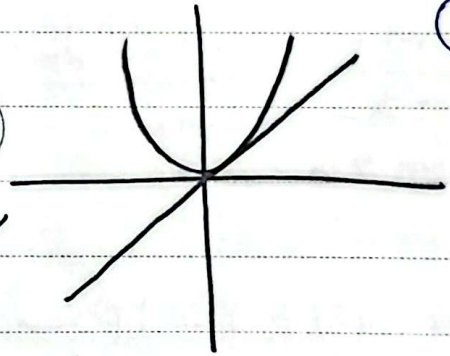
$$r/10 x^2 + v/10 x + \varepsilon = 0$$

$$\rightarrow r/10 \rightarrow rx^2 + mx + m + 450$$

$$0 \leq \Delta \rightarrow m^2 - 4m - \varepsilon \left. \begin{array}{l} 12 \\ -\varepsilon \end{array} \right\} m$$

$$1) m \geq 12 \rightarrow rx^2 + 12x + 1250 \quad \checkmark$$

$$1) m \leq -\varepsilon \rightarrow rx^2 - \varepsilon x + r50 \quad \checkmark$$



(10)