

Date:

Sub:

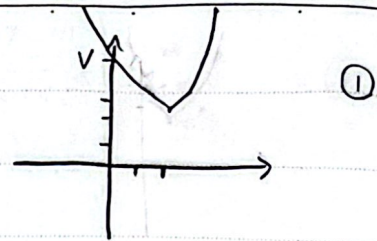
A. در رسم یکتا

در رسم یکتا

رسم یکتا

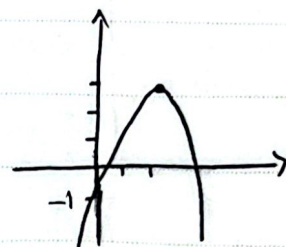
الف) $y = x^2 - \varepsilon x + 7 \Rightarrow \text{ext} \left| \begin{array}{l} \frac{-b}{2a} = \frac{\varepsilon}{2} = 2 \\ \varepsilon - 1 + 7 = 3 \end{array} \right.$

$\Delta < 0 \Rightarrow$ رسم یکتا ندارد



ب) $y = -x^2 + \varepsilon x - 1 \Rightarrow \text{ext} \left| \begin{array}{l} \frac{-b}{2a} = \frac{-\varepsilon}{-2} = 2 \\ -\varepsilon + 1 - 1 = -3 \end{array} \right.$

$\Delta > 0 \Rightarrow$ دو رسم یکتا دارد



$\Delta = 16 - 4 = 12 \Rightarrow \frac{-4 \pm 2\sqrt{3}}{-2}$

$\Rightarrow x = \frac{4 \pm 2\sqrt{3}}{2} = 2 \pm \sqrt{3}$

الف) $\Delta > 0 \Rightarrow (m+1)^2 - (\varepsilon x (\frac{1}{4}m+2)x2) > 0 \Rightarrow m^2 + 1 + 2m - \varepsilon m - 16 > 0$ (2)

$\Rightarrow m^2 - 2m - 15 > 0 \Rightarrow (m-5)(m+3) > 0 \Rightarrow \frac{-2}{+ \quad - \quad +} \Rightarrow m \in (-\infty, -3) \cup (5, +\infty)$

ب) $\Delta = 0 \Rightarrow m^2 - 2m - 15 = 0 \Rightarrow (m-5)(m+3) = 0 \Rightarrow \begin{cases} m=5 \\ m=-3 \end{cases}$

ج) $\Delta < 0 \Rightarrow m^2 - 2m - 15 < 0 \Rightarrow (m-5)(m+3) < 0 \Rightarrow \frac{-2}{+ \quad - \quad +} \Rightarrow m \in (-3, 5)$

د) $\Delta > 0 \Rightarrow (m-5)(m+3) > 0 \Rightarrow \frac{-2}{+ \quad - \quad +} \Rightarrow m \in (-\infty, -3] \cup [5, +\infty)$

الف) $\begin{cases} \Delta > 0 \Rightarrow m^2 + \varepsilon + 11m - \varepsilon m + 10 > 0 \Rightarrow m^2 - 22m + 11\varepsilon > 0 \Rightarrow \text{چون در این صورت همیشه مقدار منفی است پس همواره رسم یکتا} \\ \frac{-b}{a} < 0 \Rightarrow \frac{2m+2}{m-2} < 0 \Rightarrow \frac{-1}{+ \quad - \quad +} \Rightarrow (-1, 2) \\ \frac{c}{a} > 0 \Rightarrow \frac{10}{m-2} > 0 \Rightarrow \frac{1}{- \quad +} \Rightarrow (2, +\infty) \end{cases} \Rightarrow \emptyset$

ب) $\begin{cases} \Delta < 0 \Rightarrow \text{همواره در} \\ \frac{c}{a} < 0 \Rightarrow \frac{10}{m-2} < 0 \Rightarrow \frac{1}{- \quad +} \Rightarrow (-\infty, 2) \\ \frac{-b}{a} < 0 \Rightarrow \frac{2m+2}{m-2} < 0 \Rightarrow \frac{-1}{+ \quad - \quad +} \Rightarrow (-1, 2) \end{cases} \Rightarrow (-1, 2)$

Date:

Sub:

الف) $\max$ $\begin{cases} m-r < 0 \Rightarrow m < r \\ \Delta > 0 \Rightarrow \text{مميز له جذور} \Rightarrow (-\infty, r) \\ \frac{c}{a} < 0 \Rightarrow \frac{10}{m-r} < 0 \Rightarrow \frac{r}{-\frac{1}{r}+} \Rightarrow (-\infty, r) \end{cases}$ (K)

$\min$ $\begin{cases} m-r > 0 \Rightarrow m > r \\ \Delta > 0 \Rightarrow \text{مميز له جذور} \Rightarrow \emptyset \\ \frac{c}{a} < 0 \Rightarrow \frac{10}{m-r} < 0 \Rightarrow \frac{r}{-\frac{1}{r}+} \Rightarrow (-\infty, r) \end{cases}$

$\rightarrow x = -r \Rightarrow \frac{-b}{2a} = -r \Rightarrow \frac{r m + r}{r m - 1} = -r \Rightarrow r m + r = -r m + 1 \Rightarrow 4m = 4 \Rightarrow m = 1$

$\frac{r x^2}{r} - (r \sin \alpha) x + \frac{r}{r} = 0$ (A)

$r \sin^2 \alpha - r \left(\frac{r}{r} \right) \left(\frac{r}{r} \right) \geq 0 \Rightarrow \sin^2 \alpha \geq 1 \Rightarrow \sin^2 \alpha = 1$

$\Rightarrow \sin \alpha = \pm 1$ $\begin{cases} +1 \rightarrow \frac{r}{r} x^2 - r x + \frac{r}{r} = 0 \Rightarrow r x^2 - r x + 1 = 0 \\ -1 \rightarrow \frac{r}{r} x^2 + r x + \frac{r}{r} = 0 \Rightarrow x = -\frac{1}{1} \text{ قبة} \end{cases}$
 $\checkmark x = \frac{r}{r}$

$1 - x^2 = -(x^2 - 1)$ (C)

$\Rightarrow y = -\frac{(r x^2 - r x - 1)(r x^2 - r x - 1)}{x^2 - 1} \Rightarrow -\frac{r x^4 - 13 r x^2 - 11 r x + 1}{(x-1)(x+1)} \rightarrow x \neq \pm 1$

$\frac{r x^4 - 13 r x^2 - 11 r x + 1}{x^2 - 1} \left| \frac{x^2 - 1}{-r x^2 + 11 r x + 1} \right. \Rightarrow y = -r x^2 + 11 r x + 1 \Rightarrow x = \frac{-b}{2a} = \frac{-11r}{-2r} = \frac{11}{2}$

$= \frac{11^2}{2} \quad y_{\max} = \frac{r \cdot 11^2}{2}$

Date:

Sub:

$$r(\alpha + \beta) = \omega(\alpha + \beta) + v \Rightarrow \frac{r(m+1)}{m} = \frac{-10}{m} + v \Rightarrow \frac{r(m+1)}{m} = v \quad (v)$$

$$\Rightarrow rm + 1r = vm \Rightarrow \varepsilon m + 1r = vm \Rightarrow m = r$$

$$p = \frac{c}{a} = \frac{-r}{m}$$

$$s = \frac{-b}{a} = \frac{m+r}{m}$$

$$rx^r - 5x - r = 0 \Rightarrow \alpha^r + \beta^r = s^r - rp$$

$$\Rightarrow \frac{9}{\varepsilon} + \frac{r}{\varepsilon} = \frac{1r}{\varepsilon}$$

$$\frac{r\alpha}{\omega\beta^r} + \frac{\beta^r}{\alpha} = \quad \alpha\beta = r \quad \alpha + \beta = \omega \quad (1)$$

$$\frac{r\alpha}{\omega\beta^r} = \frac{\alpha^r}{\omega} \Rightarrow \frac{\alpha^r + \beta^r}{\omega} = \frac{s^r - rsp}{\omega} \Rightarrow \frac{1r\omega - r0}{\omega} = [9]$$

$$\left. \begin{aligned} y_1 &= ax^r + bx + c \\ y_r &= rx + 10 \end{aligned} \right\} \Rightarrow \begin{cases} y_r = rx + 10 = 1\varepsilon \\ y_1 = fa + rb + r \end{cases} \Rightarrow 1\varepsilon = fa + rb + r \quad (9)$$

$$\Rightarrow \frac{10}{\omega} = r(r+b) \Rightarrow ra + b = \omega(I) \quad (I), (II) \Rightarrow \begin{cases} ra + b = \omega \\ \frac{ra - b}{\omega a} = \omega \Rightarrow a = 1, b = r \end{cases}$$

$$\left. \begin{aligned} y_1 &= 9a - rb + \varepsilon \\ y_r &= -5 + 10 = r \end{aligned} \right\} \Rightarrow 9a - rb = 0 \Rightarrow r(r - b) = 0 \Rightarrow ra - b = (II)$$

$$\Rightarrow y_1 = x^r + rx + \varepsilon \Rightarrow x = \frac{-b}{ra} = \frac{-r}{r}$$

$$y = x \quad rx^r + (m+1)x + m + 4 = x \quad (10)$$

$$\Delta = 0 \Rightarrow rx^r + (m+1)x - 1x + m + 4 = 0$$

$$\Rightarrow m^r - 1m - \varepsilon 1 = 0 \Rightarrow (m+r)(m-1r) = 0 \Rightarrow m \begin{cases} 1r \\ -\varepsilon \end{cases} \checkmark$$

$$\Rightarrow \begin{cases} \text{if } m = 1r \Rightarrow rx^r + 1rx + 11 = 0 \quad \checkmark \quad \Delta \geq 0 \\ \text{if } m = -\varepsilon \Rightarrow rx^r - rx + r = 0 \quad \times \quad \Delta < 0 \end{cases}$$