

DATE

/ / سال جاری

SUBJECT :

۱۷/۵

$$① y_s = x^2 + bx + c$$

$$y_{\max} = -\frac{b^2}{4a} + c \xrightarrow{\Delta} y_{\max} = -\frac{b^2}{4(-1)} + 15 \frac{b^2}{4} + 15$$

$$x_{\max} = -\frac{b}{2a}$$

$$\frac{b^2}{4} + 15 \rightarrow \frac{b^2}{4} \leq 15 \Rightarrow b \leq \pm 6$$

$$② الف) f(x) = x^2 + 2x + 3 \rightarrow t = x^2 \rightarrow t^2 + 2t + 3 = 0$$

$$\Delta = 2^2 - 4(1)(3) = 4 - 12 = -8 < 0$$

منحني وجود ندارد

$$ب) f(x) = (4 - x^2)^2 - 2(4 - x^2) - 15$$

$$(4 - x^2)^2 = 16 - 8x^2 + x^4 \rightarrow f(x) = x^4 - 8x^2 + 16 - 8 + 2x^2 - 15$$

$$f(x) = x^4 - 6x^2 - 7 \rightarrow f(x) = 0 \rightarrow x^4 - 6x^2 - 7 = 0$$

$$y = x^2 \rightarrow y = u \rightarrow x^2 = u \rightarrow x = \pm \sqrt{u} \quad y^2 - 6y - 7 = 0$$

$$y = \frac{6 \pm \sqrt{36 + 28}}{2} = \frac{6 \pm \sqrt{64}}{2} = \frac{6 \pm 8}{2}$$

$$y_1 = 7, y_2 = -1$$

این دو جواب

(۳) $x^2 - 19x + m = 0$

$$x_1 = x_2 + 1$$

$$\begin{cases} x_1 + x_2 = \frac{19}{1} \\ x_1 x_2 = \frac{m}{1} \end{cases}$$

$$(x_2 + 1) + x_2 = 19 \Rightarrow 2x_2 = 18 \Rightarrow x_2 = 9 \Rightarrow x_1 = 10$$

$$x_1 x_2 = 9 \times 10 = 90 = \frac{m}{1} \Rightarrow m = 90$$

$$x_1^2 - 19x_1 + 90 = 0$$

(1, 90)

(۴) $x^2 - 9x + m - 1 = 0$

$$x_1 - x_2 = 5$$

$$\begin{cases} x_1 + x_2 = 9 \\ x_1 - x_2 = 5 \end{cases} \Rightarrow x_1 = 7, x_2 = 2$$

$$x_1 x_2 = 7 \times 2 = 14 = \frac{m-1}{1} \Rightarrow m = 15$$

$$x_1^2 - 9x_1 + m - 1 = 0$$

(1, 15)

(۵) $-mx^2 + 6x + m^2 - 1 = 0$

$$\frac{1}{x} > \alpha$$

$$\alpha + \frac{1}{x} < \frac{b}{a}, \quad \alpha < \frac{1}{x} < \frac{c}{a}$$

(۲)

$$a < -m < b < c \Rightarrow \alpha < \frac{1}{x} < \frac{c}{a} \Rightarrow \frac{m^2 - 1}{-m} < \frac{1}{x} < \frac{m^2 - 1}{-m} \Rightarrow -m < m^2 - 1$$

$$m^2 + m - 1 > 0$$

(۶) α, β

$$x^2 - mx + 1 = 0$$

$$x_1 - x_2 = 5$$

$$x_1 + x_2 = m$$

$$x_1 x_2 = 1$$

$$x_1 - x_2 = 5 \Rightarrow (x_1 + x_2) - 2x_2 = 5 \Rightarrow m - 2x_2 = 5 \Rightarrow x_2 = \frac{m-5}{2}$$

(1, 10)

$$\alpha < \frac{1}{x} < \frac{1}{x} < \frac{1}{x}$$

$$m < \alpha + \beta < \frac{1}{\alpha} + \frac{1}{\beta} \Rightarrow m < \frac{1}{\alpha} + \frac{1}{\beta} \Rightarrow m < \frac{1}{\alpha} + \frac{1}{\beta}$$

$$m^2 - \frac{1}{\alpha} + 1 > 0$$

$$\textcircled{V} x^r - \epsilon x + m s o$$

$$r x, x$$

$$\begin{cases} x + r x s \epsilon \rightarrow \epsilon x s \epsilon \rightarrow x s | \\ x \cdot r x s r x^r s m \\ m s r(1)^r s r \end{cases}$$

(1, 10)

$$x^r - \epsilon x + r \rightarrow \Delta \gamma = \checkmark$$

$$\textcircled{A} x^r - \sqrt{x} + r s o$$

$$x$$

$$x^r + \frac{1}{x^r}$$

$$x + \frac{r}{x} s \sqrt{x}$$

$$x^r + \frac{1}{x^r} \cdot \left(x + \frac{r}{x}\right)^r - r x r \left(x + \frac{r}{x}\right)^r s x + \frac{r}{x} s \gamma s \checkmark$$

$$\hookrightarrow \gamma^r - \gamma \gamma s \sqrt{x} - \gamma(r) s r \epsilon r - \epsilon r s r o \rightarrow \left(x^r + \frac{1}{x^r} s r o\right)$$

$$\textcircled{9} h(t) s - l \cdot t^r + \omega \cdot t$$

$$t_{max} s - \frac{b}{r_n} s - \frac{\omega}{r(-l \cdot)} s r_{id}$$

$$h_{max} s - l \cdot (r_{id})^r + \omega \cdot (r_{id}) s - l \cdot (r_{id})$$

$$h(t) s o \rightarrow -l \cdot t^r + \omega \cdot t s o \rightarrow -l \cdot t(t - \omega) s o \rightarrow t s \omega$$

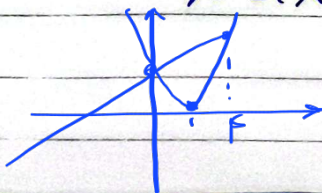
$$h s - \gamma r_{id} + r_{id} s \gamma r_{id}$$

$$\textcircled{a) (x-1)^r s r x + 1$$

بررسی حدی

$$y s (x-1)^r$$

$$y s r x + 1$$



$$x^r - r x + 1 s r x + 1 s \gamma x^r - \epsilon x s o \rightarrow x(x - \epsilon) s o$$

$$x s : r$$

(1, 10)

$$\hookrightarrow x^r + r x s |x + r| \Rightarrow x + r \gamma o \rightarrow x \gamma - r$$

$$x^r + r x s x + r \rightarrow x^r + x - r s o \rightarrow (x + r)(x - 1) s o \rightarrow \boxed{x s - r, 1}$$

$$(x + r)(x + 1) s o \rightarrow x s \{-r, 1\}$$

