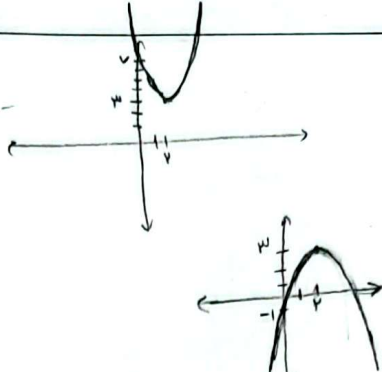


الف) $x_v = -\frac{b}{2a} = -\frac{f}{2} = 2$
 $y_v = 2^2 - 4 \cdot 2 + 7 = 3$
 $a > 0$ و u_4 و $x=0 \Rightarrow y=7$

ب) $x_v = -\frac{b}{2a} = -\frac{f}{-2} = 2$
 $y_v = -(2)^2 + 4(2) - 1 = 3$
 $a < 0$ و u_4 و $x=0 \Rightarrow y=-1$



$\Delta = b^2 - 4ac = (-2(m+1))^2 - 4(1)(\frac{1}{4}m+2) = 4m^2 + 4m + 1 - 4m - 8 = m^2 - 7$
 $\Delta = m^2 - 7m - 10 = (m-10)(m+2)$

الف) $\Delta > 0 \Rightarrow m \in (-\infty, -2) \cup (10, +\infty)$
 ب) $\Delta = 0 \Rightarrow m \in \{-2, 10\}$
 ج) $\Delta < 0 \Rightarrow m \in (-2, 10)$
 د) $\Delta \geq 0 \Rightarrow m \in (-\infty, -2] \cup [10, +\infty)$

$\Delta = b^2 - 4ac = (-2(m+1))^2 - 4(1)(m-2) = 4(m^2 + 2m + 1) - 4m + 8 = 4m^2 + 4m + 4$
 $4m^2 + 4m + 4 = 4(m^2 + m + 1) > 0 \Rightarrow$ همواره دو ریشه متفاوت
 $P = \frac{c}{a} = \frac{10}{m-2}$
 $S = \frac{-b}{a} = \frac{2(m+1)}{m-2}$

الف) $S < 0, P > 0 \Rightarrow \frac{10}{m-2} > 0 \Rightarrow m > 2$
 $\Rightarrow \frac{2(m+1)}{m-2} < 0 \Rightarrow m+1 < 0 \Rightarrow m < -1$
 $I \cap II = \emptyset \Rightarrow m \in \emptyset$
 ب) $P < 0 \Rightarrow S < 0 \Rightarrow \frac{10}{m-2} < 0 \Rightarrow m < 2$ و $-\frac{2(m+1)}{m-2} < 0 \Rightarrow m+1 > 0 \Rightarrow m > -1$
 $I \cap II \Rightarrow m \in (-1, 2)$

الف) توجه کنید که عرض از مبدأ ۱۰ است.
 $m-2 < 0 \Leftrightarrow m < 2$
 $P = \frac{c}{a} = \frac{10}{m-2} < 0 \Rightarrow$ یک ریشه مثبت و یک ریشه منفی
 $m \in (-\infty, 2)$

ب) $\frac{-b}{2a} = \frac{2(m+1)}{2(m-2)} = \frac{m+1}{m-2} = -2 \Rightarrow m+1 = -2m+4 \Rightarrow 3m = 3 \Rightarrow m = 1$



$\Delta \geq 0 \Rightarrow b^2 - 4ac \geq 0 \Rightarrow f \sin^2 \alpha - f \geq 0 \Rightarrow \sin^2 \alpha \geq 1 \Rightarrow \sin \alpha = 1$
 $S \geq 0 \Rightarrow \frac{f \sin \alpha}{\frac{f}{2}} \geq 0 \Rightarrow \sin \alpha \geq 0 \Rightarrow \sin \alpha = 1$

$\frac{f x^2}{2} - 2x + \frac{3}{2} = 0 \Rightarrow (\sqrt{\frac{f}{2}} x - \sqrt{\frac{3}{2}})^2 = 0 \Rightarrow x = \frac{\sqrt{\frac{3}{2}}}{\sqrt{\frac{f}{2}}} = \sqrt{\frac{3}{f}} = \boxed{\frac{\sqrt{3}}{\sqrt{f}}}$

$$y = \frac{(y^2x+1)(x-1)(yx-\omega)(x+1)}{-(x+1)(x-1)} = -(y^2x+1)(yx-\omega) \quad x \neq 1, -1$$

$$\max -yx^2 + 1yx + \omega = \frac{-\Delta}{fa} = \frac{-(149+140)}{-yf} = \boxed{\frac{-419}{yf}}$$

$$yS = \omega P + V \Rightarrow y\left(\frac{m+y}{m}\right) = \omega\left(\frac{-y}{m}\right) + V \Rightarrow ym+y = -\omega + Vm \Rightarrow fm = 14 \Rightarrow m=f$$

$$\left. \begin{aligned} x^y + \beta^y &= s^y - \mu P \\ s &= \frac{y}{f} = \frac{\mu}{y} \\ P &= \frac{-y}{f} = \frac{-1}{y} \end{aligned} \right\} x^y + \beta^y = \frac{y}{f} - 1 = \boxed{\left(\frac{\omega}{f}\right)}$$

$$\frac{f\alpha + \beta^0}{\omega\beta^y} = \frac{\alpha^y\beta^y + \beta^0}{\omega\beta^y} = \frac{\alpha^y + \beta^y}{\omega} = \frac{s^y - \mu SP}{s} = s^y - \mu P = y\omega - 4 = \boxed{19}$$

$$\begin{aligned} x^y - \omega x + y &= 0 \\ P=y &\Rightarrow \alpha^y\beta^y = f \\ S=\omega &= \end{aligned}$$

$$\left. \begin{aligned} x=0 &\Rightarrow y=c \\ x=0 &\Rightarrow y=f \end{aligned} \right\} \Rightarrow c=f$$

$$\left. \begin{aligned} y(y)+10 &= a(y)^y + b(y) + f \Rightarrow fa + yb = 10 \Rightarrow ya + b = \omega \\ y(-y)+10 &= a(-y)^y + b(-y) + f \Rightarrow 9a - yb = 0 \Rightarrow ya - b = 0 \end{aligned} \right\} \alpha=1, b=y$$

$$y = x^y + yx + f$$

$$\frac{-b}{ya} = \boxed{\frac{-y}{y}}$$

$$yx^y + (m+1)x + m + 4, x \text{ سلسلہ } \Rightarrow$$

$$yx^y + (m+1)x + m + 4 - x = 0 \Rightarrow \Delta = 0 \rightarrow \text{یک نقطہ تقاطع}$$

$$yx^y + mx + m + 4 = 0 \quad \Delta = m^y - f(1)(m+4) = 0$$

$$m^y - 1m - f1 = 0 \Rightarrow (m-14)(m+4) = 0 \Rightarrow \boxed{m=14, -4}$$