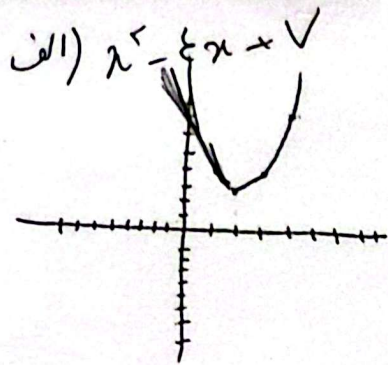
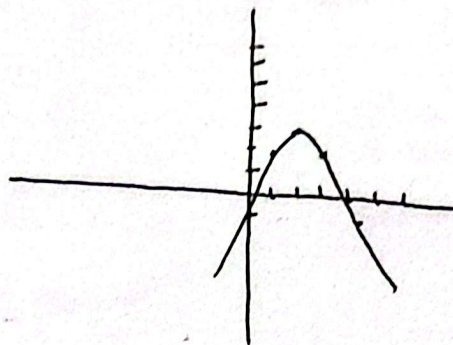




ب) $-x^2 + 4x - 1$



①

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

$\Rightarrow m^2 + 1 + 2m - 4m - 16 > 0 \rightarrow m^2 - 2m - 15 > 0 \rightarrow (m-5)(m+3) > 0$

$\xrightarrow{m=5 \quad m=-3} \begin{array}{c|c} -2 & 5 \\ \hline & \end{array} \begin{array}{c} + \\ - \end{array} \Rightarrow (-\infty, -3) \cup (5, +\infty)$

ب) $\Delta = 0 \Rightarrow (m+1)^2 - 4(1)(\frac{1}{2}m+2)$

$\Rightarrow m^2 - 2m - 15 = 0 \quad m=5 \quad m=-3$

ج) $\Delta < 0 \rightarrow m^2 - 2m - 15 < 0$

$\begin{array}{c|c} -2 & 5 \\ \hline + & - \end{array} \Rightarrow (-3, 5)$

$\Rightarrow \Delta \geq 0 \rightarrow (-\infty, -3] \cup [5, +\infty)$

الف) $\Delta > 0 \rightarrow (m+1)^2 - 4(1)(\frac{1}{2}m+2) > 0 \rightarrow m^2 - 2m - 15 > 0 \rightarrow m < -3 \text{ or } m > 5$

$S < 0 \rightarrow \frac{2(m+1)}{2} = m+1 < 0 \quad m < -1$ ①

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

$\begin{array}{c|c} 2 & \\ \hline - & + \end{array} \Rightarrow m > 2$ ②

$1 \cap 2 = \emptyset$

ب) $S < 0 \rightarrow \frac{2(m+1)}{(m-2)} < 0 \rightarrow \begin{array}{c|c} -1 & 2 \\ \hline + & - \end{array} \Rightarrow (-1, 2)$ ①

$P < 0 \rightarrow \frac{10}{m-2} < 0 \rightarrow \begin{array}{c|c} 2 & \\ \hline - & + \end{array} \Rightarrow m < 2 \rightarrow (-\infty, 2)$ ②

$\textcircled{1} \cap \textcircled{2} \rightarrow \underline{(-1, 2)}$

$$\text{الف) } ax < 0 \rightarrow (m-2) \times 10 < 0 \rightarrow 10m - 20 < 0 \rightarrow 10m < 20 \rightarrow \underline{m < 2}$$

(4)

$$\text{ب) } \frac{-b}{2a} = -2 \rightarrow \frac{x(m+1)}{x(m-1)} = -2 \Rightarrow -2m + 2 = m + 1$$

$$\underline{\underline{m = \frac{1}{3}}}$$

$$\Delta \geq 0 \rightarrow \epsilon \sin^2 \alpha - \epsilon \left(\frac{r}{\epsilon} \right) \left(\frac{x}{r} \right) = \epsilon \sin^2 \alpha - f \geq 0 \quad \sin^2 \geq 1$$

$$\Rightarrow \underline{\underline{\sin \geq 1}} \checkmark \quad \underline{\underline{\sin \leq -1}} \times$$

(5)

$$\frac{(2x-5)(x+1)(3x+1)(x-1)}{(1-x)(1+x)} = -(2x-5)(3x+1) \rightarrow -6x^2 + 13x + 5 = 0$$

$$\max x = \frac{-13}{-12} = \frac{13}{12} \Rightarrow -6\left(\frac{13}{12}\right)^2 + \frac{13}{12} + \frac{5}{12} = 0$$

(6)

$$\frac{-1015 + 2028 + 170}{144} = \frac{1813}{144} = \frac{129}{12} = \frac{107.5}{12}$$

$$v(\alpha + \beta) = \omega \alpha \beta + v$$

$$v\left(\frac{m+r}{m}\right) = \omega\left(\frac{-r}{m}\right) + v$$

$$\frac{vm+r}{m} = \frac{-10+vm}{m}$$

$$\Rightarrow vm+r = vm-10$$

$$10 = \epsilon m \rightarrow \underline{m = 10}$$

$$y = \epsilon x^2 - 4x - 2$$

(7)

$$\Rightarrow \alpha^r + \beta^r = S^r - rP = \left(\frac{9}{\epsilon}\right)^r - r\left(\frac{-r}{\epsilon}\right) = \frac{9^r}{14} - \frac{-r}{\epsilon}$$

$$\Rightarrow \frac{9}{\epsilon} + \frac{\epsilon}{\epsilon} = \boxed{\frac{13}{\epsilon}}$$

(1)

$$\alpha + \beta = \omega \Rightarrow \frac{\xi \alpha + \beta \omega}{\omega \beta^r} = \frac{\gamma_0 - \xi \beta + \beta \omega}{\omega \beta^r} = \frac{\gamma_0 - \xi \beta + \beta \omega}{\gamma_0 \beta - \gamma_0}$$

$$\alpha = \omega - \beta$$

$$\beta^r = \omega \beta - r$$

$$\beta \omega = \omega \beta^r - r \beta^r$$

$$\rightarrow \beta^r (\omega \beta^r - r \beta) \rightarrow (\omega \beta - r) (\gamma_0 \beta - \gamma_0) \rightarrow$$

$$\frac{\xi(\omega - \beta) + (\omega \beta - r)(\gamma_0 \beta - \gamma_0)}{\gamma_0 \beta - \gamma_0}$$

$$y_i = ax^r + bx + c$$

$$y_r = rx + \gamma_0$$

$$x=r \rightarrow r(r) + \gamma_0 = \gamma_1$$

$$x=-r = r(-r) + \gamma_0 = \gamma_2$$

$$ra + rb + f = \gamma_1$$

$$ra - rb + f = \gamma_2$$

$$\xi a + rb = \gamma_0$$

$$ra - rb = 0 \Rightarrow$$

$$\begin{array}{r} 12a + 9b = \gamma_0 \\ 11a - 9b = 0 \\ \hline 23a = \gamma_0 \\ \Rightarrow a = 1 \\ b = 3 \end{array}$$

$$\Rightarrow y_i = x^r + 3x + f$$

$$\text{Slope} = \frac{-b}{ra} = \frac{-r}{r} = \boxed{-\frac{r}{r}}$$

$$y = rx^r + (m+1)x + m + \gamma_1 \quad y = x$$

$$rx^r + (m+1)x + m + \gamma_1 = x$$

$$rx^r + (m)x + m + \gamma_1 = 0$$

$$\Delta = 0 \rightarrow m^r - \xi(r)(m + \gamma_1) = 0$$

$$m^r - 11m - \xi A = 0$$

$$(m - 12)(m + 3) \quad \left. \begin{array}{l} m = 12 \\ m = -3 \end{array} \right\}$$

(10)