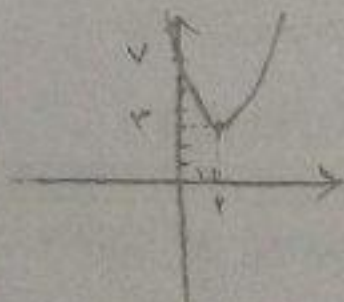


$$\text{الف) } \left| \frac{-b}{2a} \right| \leq \frac{2}{3} \leq 2$$

$$\text{min} \quad -4 + 8 - 1 \leq 3$$



$$\text{ب) } \left| \frac{-b}{2a} \right| \leq \frac{-2}{-2} \leq 2$$

$$\text{Max} \quad -4 + 8 - 1 \leq 3$$



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$$\text{الف) } \Delta > 0 \rightarrow m^2 + 2m + 1 - 4m - 14 > 0 \rightarrow m^2 - 2m - 13 > 0$$

$$\frac{-2 \pm \sqrt{4 + 52}}{2} = \frac{-2 \pm \sqrt{56}}{2} = \frac{-2 \pm 2\sqrt{14}}{2} = -1 \pm \sqrt{14}$$

$$\text{ب) } \Delta \leq 0 \rightarrow m^2 - 2m - 13 \leq 0 \rightarrow m \in [-3, 5]$$

$$\text{ج) } \Delta < 0 \rightarrow m^2 - 2m - 13 < 0 \rightarrow m \in (-3, 5)$$

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$$\text{الف) } \Delta > 0 \rightarrow 4(m^2 + 2m + 1) - 4(m^2 - 4m + 4) > 0 \rightarrow m^2 - 8m + 21 > 0$$

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

$$S < 0 \rightarrow \frac{2m+2}{m-2} < 0 \rightarrow \frac{-1}{+} \frac{2}{-} \rightarrow -1 < m < 2$$

ح) $\Rightarrow \phi$ شرطی درستی ندارد

$$\text{ب) } \Delta > 0 \rightarrow m^2 - 8m + 21 > 0 \rightarrow \Delta > 0$$

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

$$S < 0 \rightarrow \frac{2m+2}{m-2} > 0 \rightarrow -1 < m < 2 \quad (\text{منتهی الف})$$

$$\Rightarrow (-1, 2) \rightarrow -1 < m < 2$$

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الف) $\Delta = m^2 - 4m + 4 > 0 \rightarrow \Delta > 0$ هو

ب) $\frac{1}{m-2} < 0 \rightarrow \frac{2}{-1+} \rightarrow m \in (-\infty, 2)$

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

$\Delta \geq 0 \rightarrow \sin^2 \alpha - (2x^2 + 4x + 1) \geq 0 \rightarrow \sin^2 \alpha \geq 2x^2 + 4x + 1$

$\Rightarrow \sin^2 \alpha \leq 1 \rightarrow \sin \alpha \leq 1$
 $\rightarrow \sin \alpha \geq -1$
 $\Rightarrow \sin \alpha \in [-1, 1]$

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$x^2 - 2x - 1 \rightarrow 1, \frac{c}{a} \rightarrow x, s, x \in [-1, 1]$
 $x^2 - 3x - 4 \rightarrow -1, -\frac{c}{a} \rightarrow x, s, x \in [-1, 1]$

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$\rightarrow -4x^2 + 13x + 4$ is a parabola $\rightarrow \frac{-\Delta}{4a} = \frac{-(149 - (2 \times 4 \times (-4)))}{-16} = \frac{219}{16}$

$$m\alpha^2 - (m+r)\alpha - r s_0 \rightarrow s_0 = \frac{m+r}{m}, p_0 = \frac{-r}{m}$$

$$rS = \Delta p + v \rightarrow \frac{r(m+r)}{m} = \frac{-10}{m} + v \rightarrow -10ms - \epsilon m^2 + 4m \rightarrow \epsilon m^2 - 14ms_0$$

$$ms \epsilon \rightarrow s_0 = \frac{4}{\epsilon} \rightarrow \frac{r}{\epsilon}, p_0 = -\frac{r}{\epsilon} s_0 = -\frac{1}{\epsilon}$$

$$\alpha^2 + \beta^2 = s^2 - r p = \frac{4}{\epsilon} + \frac{r}{\epsilon} s = \frac{1}{\epsilon} \left[\frac{4}{\epsilon} + s \right]$$

$$p_0 \propto \beta s r \rightarrow \beta = \frac{r}{\alpha} \rightarrow \frac{\epsilon \alpha}{\omega \beta^2} + \frac{\beta^2}{\omega \beta^2} = \frac{\epsilon \alpha}{\omega (\frac{r}{\alpha})^2} + \frac{\beta^2}{\omega} = \frac{\alpha^2 + \beta^2}{\omega} = \frac{s^2 - r p}{\omega} = 19$$

$$\begin{cases} x^2 \leq a + r b s_0 \\ x^2 \leq 9a - r b s_0 \end{cases}$$

$$\rightarrow \begin{cases} 12a + 4b s_0 \\ 12a - 4b s_0 \end{cases}$$

$$r_0 a s_0 \rightarrow a s_0 > b s_0 r \rightarrow x^2 + r x + r = y_1$$

$$\rightarrow \frac{r}{\omega} s_0 \rightarrow \frac{r}{\omega} s_0$$

$$y \leq r x^2 + (m+1)x + m+4 = x \rightarrow r x^2 + m x + m+4 s_0$$

$$\Delta s_0 \rightarrow m^2 - (\epsilon x r x (m+4)) s_0 \rightarrow m^2 - 1m - \epsilon \Delta s_0 \rightarrow (m-1)(m+1) s_0$$

$$\rightarrow r x^2 + 12x + 12 \rightarrow 199 - 122 = 77 \leftarrow \begin{matrix} 12 \\ \times \end{matrix}$$

$$\begin{matrix} -r \\ \times \\ \checkmark \end{matrix} \rightarrow r x^2 - r x + r s_0 = 9 - (\epsilon x r x r) s_0 - 19 = -10 \times$$