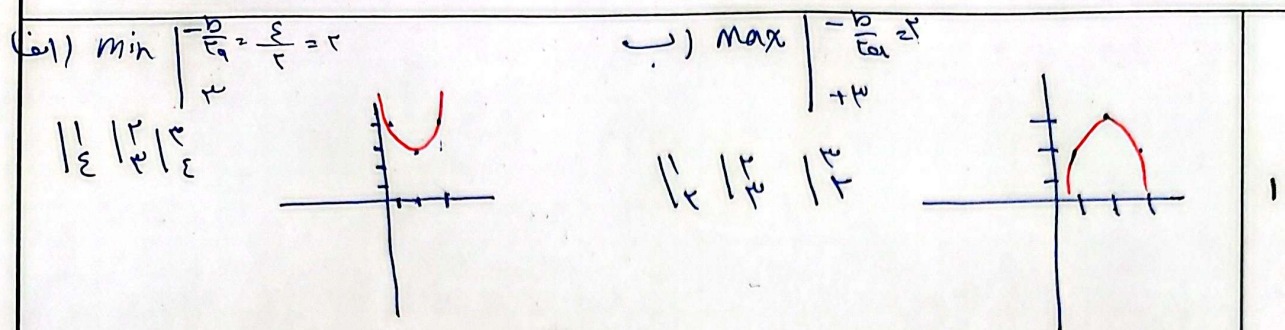




الف) $\Delta > 0 \rightarrow (m+2)^2 - 4(2)(\frac{1}{2}m+2) > 0 \rightarrow m^2 + 2m - 4m - 4 > 0 \rightarrow m^2 - 2m - 4 > 0 \rightarrow (m+2)(m-4) > 0 \rightarrow m < -2 \text{ or } m > 4$

ب) $\Delta = 0 \rightarrow m^2 - 2m - 4 = 0 \rightarrow (m+2)(m-4) = 0 \rightarrow m = -2 \text{ or } m = 4$

ج) $\Delta < 0 \rightarrow (m+2)(m-4) < 0 \rightarrow \frac{-2}{-1-1} < m < \frac{4}{1-1} \rightarrow -2 < m < 4$

د) $\Delta > 0 \rightarrow (m+2)(m-4) < 0 \rightarrow m < -2 \text{ or } m > 4$

الف) $S < 0 \rightarrow -\frac{b}{a} < 0 \rightarrow \frac{2m+2}{m-2} < 0 \rightarrow \frac{-1}{1-1} < m < 2 \rightarrow \frac{10}{m-2} > 0 \rightarrow m < 2$
 $\Delta > 0 \rightarrow (2m+2)^2 - 4(2)(m-2) > 0 \rightarrow 4m^2 + 8m + 4 - 8m + 16 > 0 \rightarrow 4m^2 + 20 > 0 \rightarrow m^2 + 5 > 0 \rightarrow m \in \mathbb{R}$

ب) $S < 0 \rightarrow -\frac{b}{a} < 0 \rightarrow \frac{2m+2}{m-2} < 0 \rightarrow -1 < m < 2 \rightarrow \frac{10}{m-2} < 0 \rightarrow m > 2$
 $\Delta > 0 \rightarrow \Delta = 4m^2 + 20 > 0 \rightarrow m \in \mathbb{R}$

الف) $P < 0 \rightarrow 2m^2 - 4m + 12 > 0 \rightarrow \frac{2}{2} < 0 \rightarrow \frac{10}{m-2} < 0 \rightarrow m < 2$
 $\Delta > 0 \rightarrow \Delta = 4m^2 + 20 > 0 \rightarrow m \in \mathbb{R}$

ب) $x_5 = -\frac{b}{2a} = 2 \Rightarrow \frac{-2m-2}{2m-2} = 2 \rightarrow 2m = 2 \rightarrow m = 1$

$\Delta = 0 \rightarrow b^2 - 4ac = (-2\sin\alpha)^2 - 4 \times \frac{2}{2} \times \frac{2}{2} = 4\sin^2\alpha - 4 \rightarrow 4(\sin^2\alpha - 1) = -4\cos^2\alpha + 4\cos^2\alpha = 0$
 $\sin^2\alpha = 1 \quad \sin\alpha = 1$
 $-\frac{b}{2a} = \frac{2\sin\alpha}{2 \times \frac{2}{2}} = \frac{2}{2} \sin\alpha \rightarrow \frac{2}{2} \times 1 = \frac{2}{2}$

$$\frac{4x^2 - 13x^2 - 11x^2 + 13x + 4}{1 - x^2} = -4x^2 + 13x + 4 \quad x \neq \pm 1$$

$$\text{Max} \rightarrow x_5 = -\frac{b}{2a} = -\frac{13}{2(-4)} = \frac{13}{8} \rightarrow -4\left(\frac{13}{8}\right)^2 + 13\left(\frac{13}{8}\right) + 4 = \frac{249}{8}$$

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$$MS = \omega p + V \rightarrow \frac{pm+y}{m} = -\frac{1}{m} + V \rightarrow \frac{pm+y}{m} = V \quad \text{if } m=14 \quad m=\xi$$

$$\alpha^r + \beta^r = S^r - rP \rightarrow \left(\frac{1}{f}\right)^r - r\left(-\frac{1}{f}\right) \Rightarrow \frac{1}{f} + 1 = \frac{1}{f}$$

$$S = \frac{p}{f} \\ P = -\frac{1}{f}$$

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$$S = \omega \quad B = \frac{r}{\omega} \quad \frac{\xi\alpha + \beta^r}{\omega\beta^r} \Rightarrow \frac{\xi\alpha + \beta^r}{\omega\beta^r} \frac{1}{\omega} \Rightarrow \frac{\xi\alpha}{\frac{r}{\omega}} + \frac{\beta^r}{\omega} \rightarrow \frac{\alpha^r}{\omega} + \frac{\beta^r}{\omega}$$

$$\frac{\alpha^r + \beta^r}{\omega} \rightarrow \frac{S^r - rSP}{\omega} \Rightarrow \frac{1^r - r(1)}{\omega} \rightarrow \frac{1}{\omega} = 1$$

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$$c = \xi \rightarrow x = 0 \quad y = ax^r + bx + \xi \quad \begin{vmatrix} y \\ y' \end{vmatrix}$$

$$x = r \rightarrow y_2 = \xi b = 1 \quad y_1 = \xi a + r b + \xi \rightarrow \xi a + r b + \xi = 1 \rightarrow \xi a + r b = 1 - \xi \rightarrow r a + b = \omega$$

$$x = r \rightarrow y_p = \xi \quad y_1 = a a - r b + \xi \rightarrow a a - r b + \xi = \xi \rightarrow a a - r b = 0 \rightarrow r a = b$$

$$r a + b = a \quad a = 1, b = r \rightarrow y_1 = x^r + r x + \xi \quad x_5 = -\frac{b}{2a} = -\frac{r}{2} = -\frac{1}{2}$$

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$$y = x \rightarrow x_2 = r x^r + (m+1)x + (m+4) \rightarrow r x^r + m x + (m+4) = 0 \quad (\text{consider } x \text{ as variable})$$

$$\Delta = 0 \rightarrow m^2 - 4(m+4) = m^2 - 4m - 16 = 0 \rightarrow (m-1)(m+4) = 0 \quad m = 1 \quad \text{if } m = 1 \quad y = x^2 + 5x + 8$$

$$x_5 = -\frac{b}{2a} = -\frac{m}{2} \rightarrow x_5 > 0 \rightarrow -\frac{m}{2} > 0 \quad m < 0 \rightarrow \boxed{m = -2}$$

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