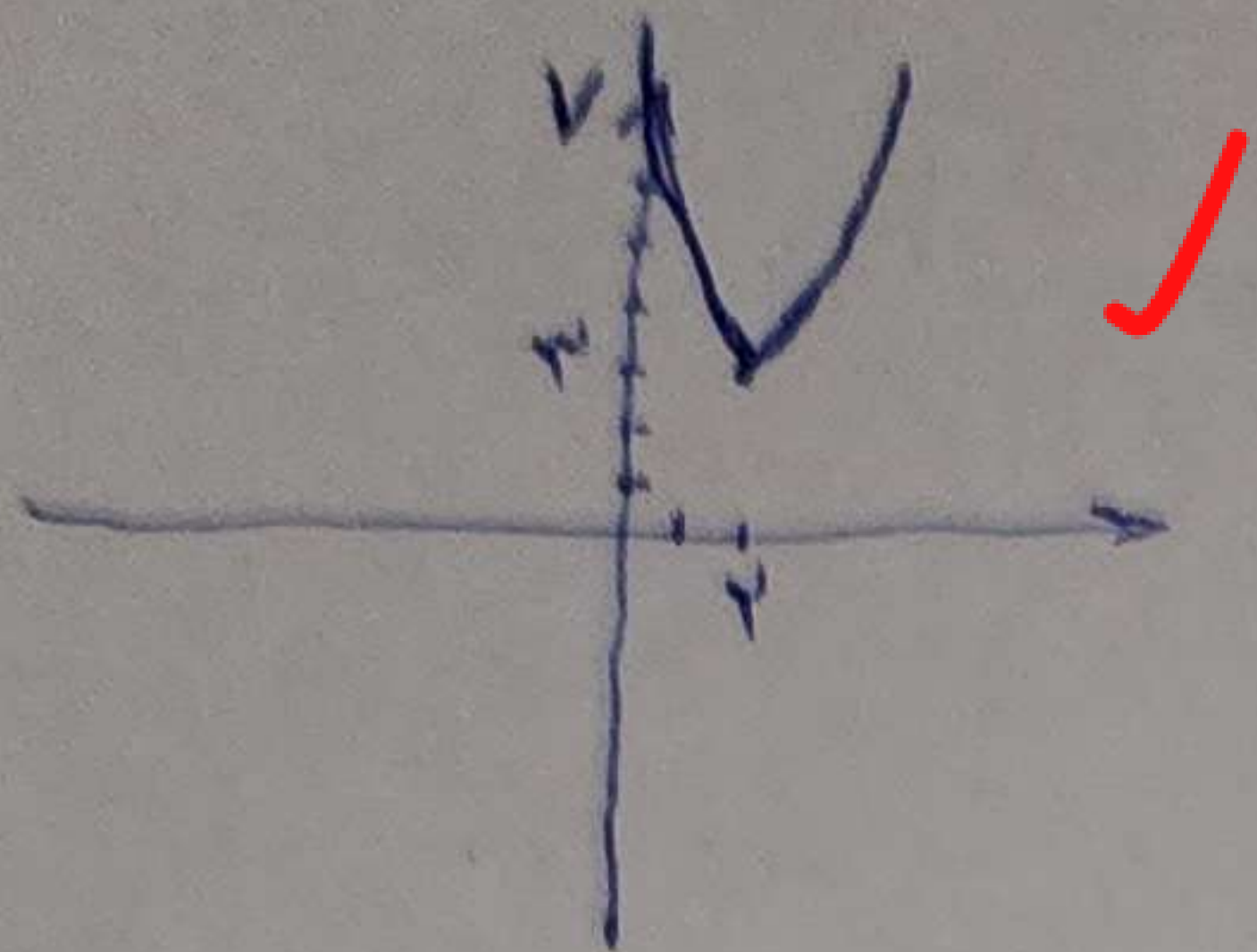


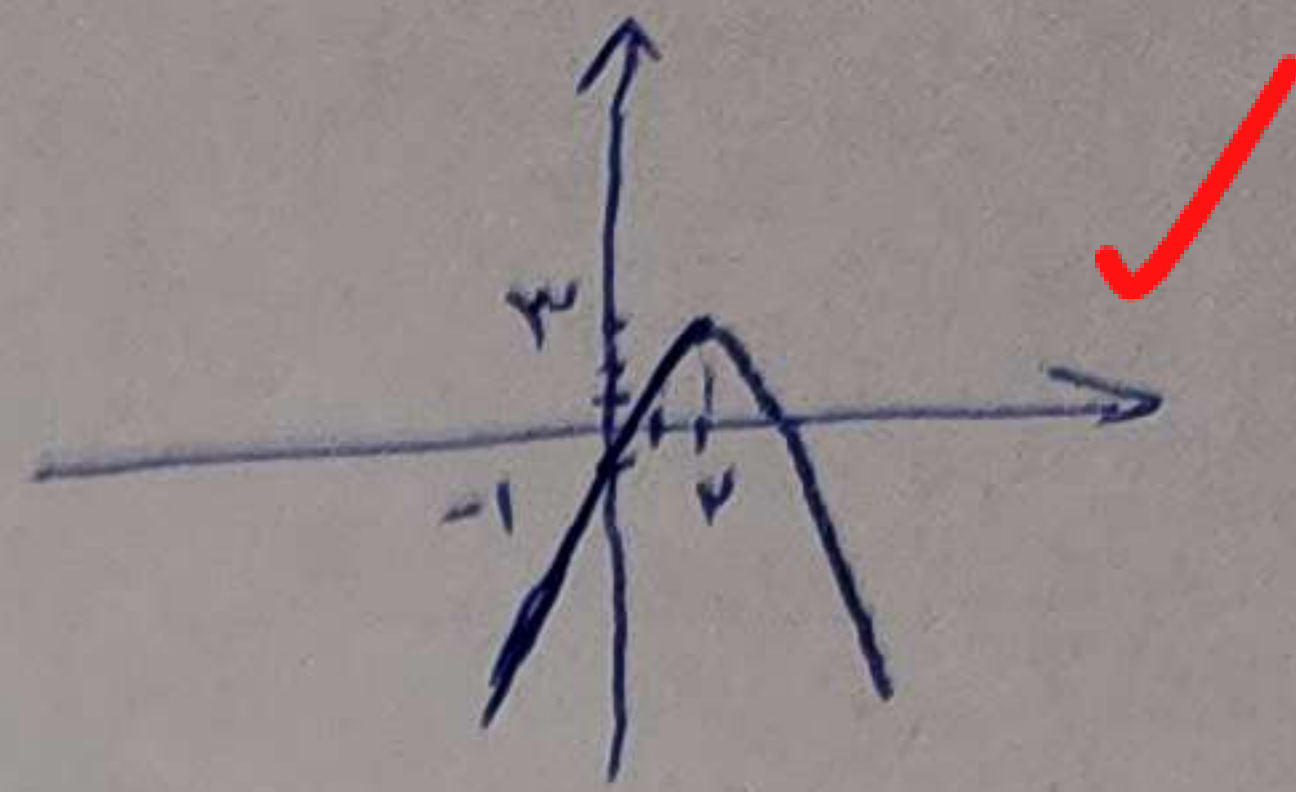
الف) min

$$x_5 = \frac{4}{4} = 1 \rightarrow y_5 = 3$$



ب) max

$$x_5 = \frac{-4}{4} = -1 \rightarrow y_5 = 3$$



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الف) $\Delta \geq 0 \Rightarrow m^2 + 2m + 1 - 4m - 14 = m^2 - 2m - 13$

$(m+3)(m-5)$ $\Delta > 0 \Rightarrow \frac{-3}{-1} < m < \frac{5}{-1}$ $\mathbb{R} - [-3, 5]$ ✓

ب) $\Delta = 0 \Rightarrow \{-3, 5\}$ ✓

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ج) $\Delta < 0 \Rightarrow (-3, 5)$ ✓

$\Delta \geq 0 \Rightarrow \mathbb{R} - (-3, 5)$ ✓

د)

الف) $\Delta = 4(m^2 + 2m + 1 - 10m + 20) = 4(m^2 - 8m + 21)$

$\Delta > 0 \checkmark$

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

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

$\Delta > 0 \checkmark$

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

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

$(-1, 2)$ ✓

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الف) $\frac{10}{m-2} < 0 \Rightarrow m-2 < 0 \Rightarrow m < 2$ ✓

زیرا $\frac{c}{a}$ منفی Δ مثبت می‌باشد

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

$m+1 = -2m+4 \Rightarrow m = 1$ ✓

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$\Delta \geq 0 \quad f(\sin^2 \alpha) \geq f\left(\frac{1}{3}\right)\left(\frac{2}{3}\right) \Rightarrow \sin^2 \alpha \geq 1 \Rightarrow \sin^2 \alpha = 1 \Rightarrow \sin \alpha = \pm 1$

برگزینا را ندارد

$\sin \alpha = 1 \Rightarrow \frac{2x^2}{3} - 2x + \frac{2}{3} = 0 \xrightarrow{\times 3} 2x^2 - 12x + 2 = 0 \Rightarrow (2x-3)^2 = 0 \Rightarrow x = \frac{3}{2}$ ✓

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$$\frac{(x-1)(x+1)(x+1)(x-\omega)}{(x+1)(1-x)} \rightarrow -(4x^2 - 12x - \omega) \rightarrow -4x^2 + 12x + \omega \rightarrow \frac{-12}{-12} = \frac{12}{12} \quad (2)$$

$$x \notin \{\pm 1\} \quad \frac{-12 \cdot -129}{-12} = \frac{1548}{12} = 129$$

$$V_S - V = \omega P$$

$$\frac{-10}{m} = \frac{r(m+1) - Vm}{m} \Rightarrow r(m+1) - Vm + 10 \rightarrow 14 = 8m \Rightarrow m = \frac{7}{4}$$

$$S = \frac{7}{4}$$

$$P = -\frac{1}{4}$$

$$\alpha^2 + \beta^2 = S^2 - 4P = \frac{49}{16} + 1 = \frac{65}{16} \quad \checkmark$$

$$\frac{f\alpha}{\omega\beta^2} + \frac{\beta^2}{\omega} = \frac{\beta^2}{\omega} + \frac{f\alpha \times \alpha^2}{\omega \times \frac{f}{\alpha^2}} = \frac{\alpha^4 + \beta^2}{\omega} = \frac{S^2 - 4SP}{\omega} = \frac{12\omega - 30}{\omega} = 12 \quad \checkmark$$

$$S = \omega = \alpha + \beta$$

$$P = \gamma = \alpha\beta \Rightarrow \beta = \frac{\gamma}{\alpha}, \beta^2 = \frac{\gamma^2}{\alpha^2}$$

$$f = \text{تقاطع با محور}$$

$$r(r) + 10 = 18 \rightarrow 18 = 9a + 12b + 6 \rightarrow 9a + 12b = 12 \rightarrow a = 1, b = 3$$

$$r(-3) + 10 = 6 \rightarrow 6 = 9a - 12b + 6 \rightarrow b = 3a \quad \alpha_s = \frac{-b}{r_a} = \frac{-3}{1} = -3 \quad \checkmark$$

$$rx^2 + (m+1)x + m+9 = x \rightarrow rx^2 + mx + m+9 = 0 \rightarrow \Delta = 0$$

$$x^2 - 12x - 81 = 0 \rightarrow m = 12 \Rightarrow x^2 + 9x + 9 = 0 \Rightarrow \alpha$$

$$m = -8 \Rightarrow x^2 - 2x + 1 = 0 \quad \checkmark$$

$x = 1$
نام اول