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(۱)

الف) $2x^2-4x+1 \to a>0 \to Min$

رأس $\left| \begin{array}{l} \frac{-b}{2a} = \frac{4}{4} = 1 \\ \frac{-\Delta}{4a} = -1 \end{array} \right.$

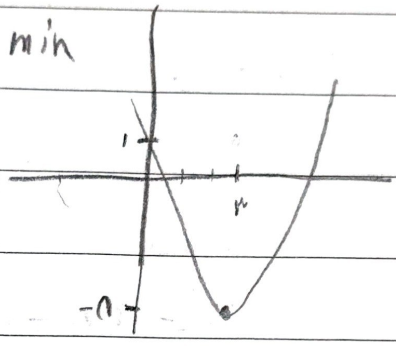
ب) $-4x^2+3x-5 \to a<0 \to Max$

رأس $\left| \begin{array}{l} \frac{-b}{2a} = \frac{-۳}{-۴} = \frac{۳}{۴} \\ \frac{-\Delta}{4a} = \frac{۳۱}{-۸} \end{array} \right.$

(۲)

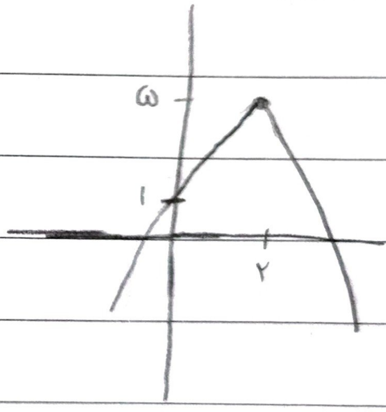
الف) $y=x^2-6x+1 \quad a>0$ min

$\left| \begin{array}{l} ۳ \\ -۸ \end{array} \right.$



ب) $y=-x^2+4x+1 \quad a<0$ max

$\left| \begin{array}{l} ۲ \\ ۵ \end{array} \right.$



(۳)

$\alpha+\beta=1$

$\beta=1-\alpha$

$\alpha\beta=-۲ \to (\alpha)(1-\alpha) = \alpha-\alpha^۲ = -۲ \Rightarrow \alpha^۲-\alpha-۲=0$

$(\alpha-۲)(\alpha+1)=0$

(۲) (-۱)

$4x^3+kx^2-9x-2=0 \xrightarrow{(۲)}$

$۳۲+۴k-۱۸-۲=0 \to \boxed{k=-۳}$ ✓

$4x^3+kx^2-9x-2=0 \xrightarrow{(-۱)} -۴+k+۹-۲=0$

$\boxed{k=-۳}$ ✓

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(۴)

$\sqrt{\alpha}-\sqrt{\beta}=1$ به توان ۲ $\rightarrow \alpha+\beta-2\sqrt{\alpha\beta}=1$

$\alpha+\beta=3m$ ، $\alpha\beta=m$

$3m-2\sqrt{m}-1=0$

$3t^2-2t-1=0$

$t^2-2t-3=0 \rightarrow (t-3)(t+1)$

$t=3$ ✓ ، $t=-1$ ✗

$\frac{-b}{a}=3m$

$\frac{c}{a}=m$

$2x^2-mx-m=0 \rightarrow 2x^2-x-1=0$

$x^2-x-2=0$

$(x-2)(x+1)$

$(+1)$ $(-\frac{1}{2})$

$\rightarrow -\frac{1}{2}\times 1=\boxed{-\frac{1}{2}}$

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۶

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(۵)

$S = \frac{1}{2} \times \sqrt{\frac{m^2 + 4 - 4m}{2}} = \left|\frac{3}{4}\right|$

$m\,|m-2| = |3| \longrightarrow m\,|m-2| = \pm 3$

زهرا سادات حسینی

(۴)

$y = ax^2 + bx + a$

$a > 0 \rightarrow Min$

$\frac{-\Delta}{4a} = \frac{V}{8} \Rightarrow \frac{-9 + 4a^2}{4a^2} = \frac{V}{8} \rightarrow 32a^2 - 72 = 28a \Rightarrow$ تقسیم بر ۴

$8a^2 - 7a - 18 = 0 \rightarrow a^2 - 7a - 144 = 0 \rightarrow (a-16)(a+9)$

$(a-2)(a+\frac{9}{8})$

$a = 2$ ✓ $\quad a = -\frac{9}{8}$

یک مقدار

غ ق ق با شرط $a > 0$

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$x^2-(a+1)x+a=0 \Longrightarrow$ (۲)

$\frac{\sqrt{\Delta}}{|a|}=2 \Rightarrow \sqrt{a^2-2a+1}=2 \Rightarrow \sqrt{(a-1)^2}=2 \Rightarrow |a-1|=2$

$a<1 \rightarrow a-1<0 \Rightarrow x^2-1=0 \Rightarrow x=\pm 1$ غ ق

$a>1 \rightarrow a=3 \Rightarrow x^2-4x+3=0 \Rightarrow (x-1)(x-3)=0$

① ③

$P'=3$ = حاصلضرب

$x^2-(3a+1)x+b=0$

$\frac{\sqrt{\Delta}}{|a|}=2 \Rightarrow \sqrt{9a^2+2a+1}=2 \Rightarrow \sqrt{81+1+18-4b}=2 \Rightarrow 4b=24$

$x=3$ $P''=24$

$P'-P''=21$

$-a^2 + 8a \quad 4 \times -9 \times 2$

$-8a$

نمره است دارت حسین

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(1)

$y = -ax^2 + ax + 2$

$\frac{-b}{2a} = \frac{+a}{+2a} = \frac{1}{2}$

$\frac{-\Delta}{4a} = \frac{a^2 + (-4)(-a)(2)}{-4a} = \frac{-a^2 - 8a}{-4a} = \frac{a^2 + 8a}{4a} = \frac{a+8}{4}$

$y = 2bx^2 - bx - 1 \Rightarrow \frac{1}{2}b - \frac{1}{2}b - 1 \rightarrow \frac{a+8}{4} = -1 \Rightarrow$

$a + 8 = -4 \rightarrow \boxed{a = -12}$

$y = -ax^2 + ax + 2 \Rightarrow y = 12x^2 - 12x + 2$

$y = 2bx^2 - bx - 1 \Rightarrow$

ext $\frac{-b}{2a} = \frac{b}{4b} = \frac{1}{4}$

$\frac{-\Delta}{4a} = \frac{-b^2 - 8b}{8b}$

$y = 12x^2 - 12x + 2 \Rightarrow y = \frac{3}{4} - 3 + 2 \Rightarrow y = -\frac{1}{4} \Rightarrow$

$\frac{b^2 + 8b}{8b} = \frac{1}{4} \rightarrow 4b^2 + 32b = 8b \Rightarrow 4b^2 + 24b = 0$

$b^2 + 6b = 0$

$b(b+6) = 0$

$\boxed{b - a = -6 + 12 = 6}$

غ ق ق (0) (-6)

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$y = 2\omega x^2 + 8x + \beta$ هم‌ارز سادات حسینی

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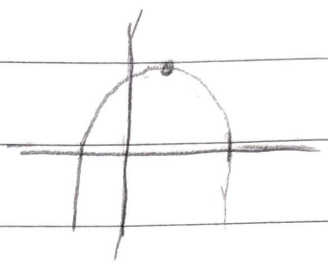
(۹)

$\alpha\beta = \frac{c}{a} \Rightarrow \frac{\beta}{2\omega\alpha} \Rightarrow \alpha^2 = \frac{1}{2\omega} \Rightarrow \alpha = \pm\frac{1}{\omega}$

$\alpha + \beta = \frac{-b}{a} \Rightarrow \pm\frac{8}{\omega} \rightarrow \beta > \alpha$ چون زیرا $-\frac{8}{\omega}$ غ ق ق

$\alpha = \frac{-1}{\omega}$ $\beta = 1 \Rightarrow$  ناصیه اول

(۱۰)

$\Delta = +(a^2 + b^2 - 12) = \delta^2 - 2\rho - 12$

$\frac{\rho = a+b-1}{1} = \delta - 1$

$\delta^2 - 2(\delta - 1) - 12 = \delta \Rightarrow \delta^2 - 2\delta - 10 \Rightarrow \delta^2 - 2\delta - 10 = 0$

$(\delta - 5)(\delta + 2) = 0$

⑤ ← $\rho = a - 1 = 4$ (-۲)

↓

$\rho = -2 - 1 = -3$

غ ق ق زیرا ρ منفی است

اما جزء ریشه‌ها نیست طبیعی باشد