نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ..... کلاس .....

۱۹,۲۵

۱

الف) $2x^2-4x+1 \longrightarrow ext\left|\begin{matrix}\frac{-b}{2a}\\ \checkmark\end{matrix}\right. \longrightarrow ext\left|\begin{matrix}1\\ -1\end{matrix}\right. \checkmark \longrightarrow$ min دارد

ب) $-2x^2+2x-5 \longrightarrow ext\left|\begin{matrix}\frac{-b}{2a}\\ \frac{-\Delta}{4a}\end{matrix}\right. \longrightarrow ext\left|\begin{matrix}\frac{2}{4}\\ \frac{-(9-40)}{-8}\end{matrix}\right. \longrightarrow ext\left|\begin{matrix}\frac{2}{4}\\ \frac{-31}{8}\end{matrix}\right.$ ✓ Max دارد

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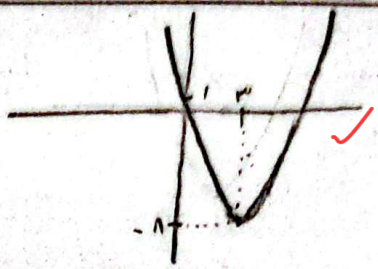
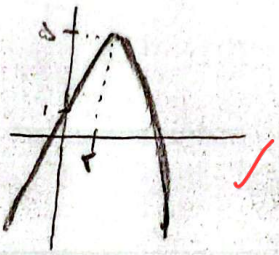
الف) $x^2-6x+1 \longrightarrow ext\left|\begin{matrix}3\\ -8\end{matrix}\right. \longrightarrow$

$9-18+1$



ب) $y=-x^2+4x+1 \longrightarrow ext\left|\begin{matrix}2\\ 5\end{matrix}\right. \longrightarrow$

$-4+8+1$



✓

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$\alpha=-1 \longrightarrow 4\alpha^3+k\alpha^2-9\alpha-2=0 \longrightarrow -4+k+9-2=0 \longrightarrow k=-3$

ریشه‌های معادله مشترک می‌نامیم

$\beta=2 \longrightarrow 4\beta^3+k\beta^2-9\beta-2=0 \longrightarrow 32+4k-18-2=0 \longrightarrow 4k=-12$

$\longrightarrow k=-3$

$\longrightarrow \boxed{k=-3}$ ✓ ثبت

۴

$\sqrt{\alpha}-\sqrt{\beta}=1 \xrightarrow{\text{توان ۲}} (\alpha+\beta)-2\sqrt{\alpha\beta}=1 \longrightarrow 8-2\sqrt{\rho}=3m-2\sqrt{m}=1$

$\sqrt{m}=t \longrightarrow 2t^2-2t-1=0 \xrightarrow{a+b+c=0} \sqrt{m}=1$ ✓ $\longrightarrow m=1$

$\sqrt{m}=\frac{-1}{2}$ ✗ قبول نیست

$2x^2-x-1=0 \longrightarrow \rho=\frac{c}{a}=\frac{-1}{2} \longrightarrow \boxed{\rho=-\frac{1}{2}}$ ✓

۵

$|m|\times\frac{\sqrt{\Delta}}{|a|}\times\frac{1}{2}=\frac{3}{4} \longrightarrow |m|\times\frac{\sqrt{m^2+4m+4-8m}}{4}=|m|\times\frac{\sqrt{m^2-4m+4}}{4}$

$\longrightarrow =|m|\times\frac{|m-2|}{4}=\frac{3}{4} \longrightarrow m^2-2|m|=3 \longrightarrow m^2-2|m|-3=0$

$|m|=t \longrightarrow t^2-2t-3=0 \longrightarrow (t-3)(t+1)$

$|m|=-1$ ✗ قبول نیست

$|m|=3$ ✓ $\longrightarrow m=-3$ یا $m=3$

$ext\left|\frac{-b}{2a} \longrightarrow \frac{m}{2} \longrightarrow 1/5 \text{ یا } -1/5 \longrightarrow \{-1/5, 1/5\}\right.$ ثبت

۱,۲۵

۶ (۲)

$\min$ سهمی $\longrightarrow a\neq 0$ ، $ext\left|\begin{matrix}-\frac{\Delta}{4a}\end{matrix}\right. \longrightarrow \frac{-\Delta}{4a}=\frac{V}{4} \longrightarrow -\Delta = Va$

$\longrightarrow -(9-4a^2) = Va \longrightarrow 8a^2-Va-18=0 \longrightarrow a=\frac{V\pm\sqrt{49+576}}{16}$

$a=\frac{7\pm 25}{16}$ $\begin{matrix}\nearrow \frac{32}{16}=2 \checkmark \\ \searrow \frac{-18}{16}=-\frac{9}{8}\times\end{matrix}$ $\longrightarrow a=2 \longrightarrow$ به ازای یک مقدار

گزینه ۲

۷ (۲)

$x^2-(a+1)x+a=0 \longrightarrow \frac{x_1+x_2}{x_1x_2}=2 \longrightarrow \sqrt{a^2+2a+1-4a}=4 \longrightarrow \sqrt{a^2-2a+1}=2$

$|a-1|=2$ $\begin{matrix}\nearrow a=-1 \\ \searrow a=3\end{matrix}$ $\longrightarrow a+1>0 \longrightarrow a=3$

$x^2-10x+b \longrightarrow S=10=6+4 \longrightarrow P=b=24 \longrightarrow \Delta P=24-3=21$

گزینه ۱

۸ (۲)

$\frac{-b}{2a}\ \frac{a}{2a}=\frac{1}{2}$ ، $\frac{-\Delta}{4a}=\frac{-(a^2+8a)}{-4a}=\frac{a-8}{-4}$

$\frac{b}{2}-\frac{b}{2}-1=+\frac{a}{4}+2 \longrightarrow -\frac{a}{4}=4 \longrightarrow a=-16$ ✓ $\longrightarrow b-a=-6-(-16)=+6$ ✓

گزینه ۴

$\frac{-b}{2a}:\frac{b}{4b}:\frac{1}{4} \longrightarrow \frac{-a}{16}+\frac{4a}{16}+2=\frac{-6a}{16}+2=\frac{-6a}{16}+1=-\frac{1}{4} \longrightarrow \frac{2\times b}{16}-\frac{b}{4}-1=-\frac{1}{4}$

$\longrightarrow -\frac{b}{8}-1=-\frac{1}{4} \longrightarrow b=-4$ ✓

۹ (۲)

$\alpha\beta=\frac{\beta}{25\alpha} \longrightarrow \alpha=\frac{1}{25\alpha}$ $\times\alpha$ $\alpha^2=\frac{1}{25} \longrightarrow \alpha=\pm\frac{1}{5}$

if $\alpha=$ $\begin{matrix}\nearrow +\frac{1}{5} \longrightarrow 0=25\times\left(\frac{1}{5}\right)\times\left(\frac{1}{25}\right)+\frac{4}{5}+\beta=\frac{1}{5}+\frac{4}{5}+\beta \longrightarrow \beta=-1 \times \\ \searrow -\frac{1}{5} \longrightarrow 0=25\times\left(-\frac{1}{5}\right)\times\frac{1}{25}-\frac{4}{5}+\beta=-\frac{1}{5}-\frac{4}{5}+\beta \longrightarrow \beta=+1\end{matrix}$ $\alpha=\frac{1}{5}$

$\beta>\alpha$

$\longrightarrow y=-5x^2+4x+1 \longrightarrow ext\left|\begin{matrix}\frac{4}{10}=\frac{2}{5}\end{matrix}\right. \checkmark \longrightarrow ext\left|\begin{matrix}+\frac{2}{5} \\ +\frac{9}{5}\end{matrix}\right. \longrightarrow$ نامنفی اول

گزینه ۱

۱۰ (۲)

$S=a+b=a^2+b^2-12 \longrightarrow a+b=(a+b)^2-2ab-12$

$P=ab=a+b-1$

$\longrightarrow 0=(a+b)^2-2(a+b-1)-a+b-12=(a+b)^2-3(a+b)-10=0$

$a+b=t \longrightarrow t^2-3t-10=0 \longrightarrow (t-5)(t+2)=0 \longrightarrow a+b=5$ ✓ $\begin{matrix}\nearrow =5 \checkmark \\ \searrow =-2 \times\end{matrix}$

$a+b>0$

$\longrightarrow \boxed{a+b=5}$ ✓

گزینه ۲

$|m(m-2)| = 3 \rightarrow m(m-2) = 3 \rightarrow \begin{cases} m = -1 \\ m = 3 \end{cases}$ -۵

$m = -1 \rightarrow y = x^2 + x + 1 \rightarrow \frac{-b}{2a} = \frac{-1}{2}$

$m = 3 \rightarrow y = x^2 - 3x + 1 \rightarrow \frac{-b}{2a} = \frac{3}{2}$