نام و نام خانوادگی ماهان بهشت اللهی پاسخنامه تشریحی تکلیف شماره ۲۴ کلاس دهم تجربی A سه‌شنبه‌ها

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الف) $y=2x^2-4x+1$ $\quad ext\left|\begin{array}{l}-\frac{b}{2a}\Rightarrow \frac{4}{4}=1 \quad 2(1)^2-4(1)+1\Rightarrow -1\\ -\frac{\Delta}{4a}\end{array}\right.$ $\quad ext\left|\begin{array}{l}1\\-1\end{array}\right.$

تابع min داراست min با عرض ۱- $\Leftarrow a>0$

ب) $y=-2x^2+3x-5$ $\quad ext\left|\begin{array}{l}\frac{-b}{2a}\Rightarrow\frac{-3}{-4}=\frac{3}{4}\\ \frac{-\Delta}{4a}\Rightarrow -\frac{b^2-4ac}{4a}\Rightarrow -\frac{9-\overbrace{4(-2)(-5)}^{-40}}{-8}=-\frac{-31}{-8}=-\frac{31}{8}\end{array}\right.$

$ext\left|\begin{array}{l}\frac{3}{4}\\-\frac{31}{8}\end{array}\right.$ تابع max داراست $\Leftarrow a<0$

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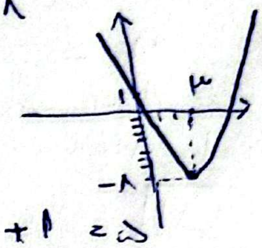
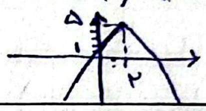
الف) $y=x^2-6x+1$ $\quad ext\left|\begin{array}{l}\frac{-b}{2a}\Rightarrow\frac{6}{2}=3 \quad 3^2-6(3)+1=-8\\ \frac{-\Delta}{4a}\end{array}\right.$ $\quad a>0$ min



ب) $y=-x^2+4x+1$ $\quad ext\left|\begin{array}{l}\frac{-b}{2a}\Rightarrow\frac{-4}{-2}=2 \quad -(2)^2+4(2)+1=5\\ \frac{-\Delta}{4a}\end{array}\right.$ $\quad a<0$ max



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$\alpha,\beta,\gamma \Rightarrow \alpha+\beta+\gamma=-\frac{b}{a}\ ,\ \alpha\beta+\alpha\gamma+\beta\gamma=\frac{c}{a}\ ,\ \alpha\beta\gamma=-\frac{d}{a}$

$\alpha+\beta=1\ ,\ \alpha\beta=-2$

$a=4, d=-2 \Rightarrow \alpha\beta\gamma=-\frac{-2}{4}=\frac{1}{2} \Rightarrow \alpha\beta\gamma=(\alpha\beta)\gamma \Rightarrow -2\gamma=\frac{1}{2}$

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

$\alpha+\beta+\gamma=-\frac{k}{4} \Rightarrow 1-\frac{1}{4}=-\frac{k}{4} \Rightarrow \frac{3}{4}=-\frac{k}{4} \Rightarrow \boxed{k=-3}$

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$\sqrt{\alpha}-\sqrt{\beta}=1 \Rightarrow \alpha+\beta-2\sqrt{\alpha\beta}=1 \Rightarrow S-2\sqrt{P}=1 \Rightarrow 3m-2\sqrt{m}=1$

$\Rightarrow 3m-2\sqrt{m}-1=0 \Rightarrow \sqrt{m}=1\ ,\ \frac{-1}{3} \Rightarrow \boxed{m=1} \Rightarrow 2x^2+x-1=0$

$\Rightarrow \boxed{P=-\frac{1}{2}}$

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ارتفاع مثلث برابر $y(0)=m$ و قاعده آن اختلاف صفرهای تابع می‌باشد.

$\alpha-\beta=\frac{\sqrt{\Delta}}{|a|}=\frac{\sqrt{(m+2)^2-8m}}{2}=\frac{\sqrt{(m-2)^2}}{2}=\frac{|m-2|}{2}$

$S=\frac{1}{2}\times\frac{|m-2|}{2}m=\frac{3}{4} \Rightarrow |m-2|m=3 \Rightarrow (m-2)m=\pm 3 \Rightarrow m=1$ یا $m=-5$

$\begin{cases}(m-2)m=3 \Rightarrow m=-1 \text{ یا } m=3\\ (m-2)m=-3\end{cases}$ ریشه حقیقی ندارد

طول رأس سهمی $y=x^2+x+1$ برای $m=-1$ برابر $\boxed{-\frac{1}{2}}$ خواهد بود

$x_S = \frac{-3}{2a} \Rightarrow a\left(\frac{-3}{2a}\right)^2 + 3\left(-\frac{3}{2a}\right) + a = \frac{7}{8} \Rightarrow \frac{9}{4a} - \frac{9}{2a} + a = \frac{7}{8}$ $\Rightarrow \frac{-9+4a^2}{4a} = \frac{7}{8} \Rightarrow 8a^2 - 7a - 18 = 0 \Rightarrow \begin{cases} S>0 \\ P<0 \end{cases}$ $\underbrace{\text{دیگر ریشه منفی}}_{\times}$ + $\underbrace{\text{یک ریشه}}_{\checkmark}$ $a>0$ $\Rightarrow$ $\boxed{\text{یک مقدار}}$	۶
$S = a-1,\ P = a \quad n-1, n+1 \Rightarrow (n-1)+(n+1) = 2n \quad a-1 = 2n \Rightarrow a = 2n+1$ $(n-1)(n+1) = n^2-1 \Rightarrow a = n^2-1 \Rightarrow 2n+1 = n^2-1 \Rightarrow n^2-2n-2=0 \rightarrow n = 1\pm\sqrt{3}$ $n^2-1-(2n+1)=0 \Rightarrow n^2-2n-2=0$ جواب طبیعی ندارد $1, 3 \quad S=4 \quad P=3 \Rightarrow a=3 \quad a-1=2 \quad S=4\ \times$] $3, 5 \quad S=8 \quad P=15 \quad a=15 \quad a-1=14,\ S=8\ \times$] $\underline{a=3}$ (عدد طبیعی $\rightarrow S = 3a+1 \Rightarrow 3(3)+1 = 10 \rightarrow m, m+2 \Rightarrow m+(m+2) = 10$ $2m+2=10 \Rightarrow m=4 \Rightarrow$ ریشه ها $4, 6 \Rightarrow \underline{b = 24}$ حاصل ضرب $a = 3,\ b = 24$ $24 - 3 = \boxed{21}$	۷
$a_1 = -a,\ b_1 = a \Rightarrow x_1 = \frac{-a}{2(-a)} = \frac{1}{2} \Rightarrow y_1 = -a\left(\frac{1}{2}\right)^2 + a\left(\frac{1}{2}\right) + 2$ $= \frac{a}{4} + 2 \Rightarrow \left(\frac{1}{2}, \frac{a}{4}+2\right)$ $2b\left(\frac{1}{4}\right) - b\left(\frac{1}{2}\right) - 1 = \frac{a}{4} + 2 \Rightarrow \frac{b}{2} - \frac{b}{2} - 1 = -1 \Rightarrow -1 = \frac{a}{4} + 2$ $\frac{a}{4} = -3 \Rightarrow \underline{a = -12}$ $\quad a_2 = 2b,\ b_2 = -b \Rightarrow x_2 = \frac{1}{4}$ $y_2 = \frac{b}{8} - \frac{b}{4} - 1 = -\frac{b}{8} - 1 \Rightarrow \left(\frac{1}{4}, -\frac{b}{8} - 1\right)$ $\quad \boxed{b - a = 6}$ $-a\left(\frac{1}{16}\right) + a\left(\frac{1}{4}\right) + 2 = -\frac{b}{8} - 1 \overset{a=-12}{\Rightarrow} \frac{12}{16} - 3 + 2 = -\frac{b}{8} - 1 \Rightarrow b = -6$ $\quad b - a = -6(-(-12)) = 6)$	۸
$\alpha + \beta = -\frac{4}{25\alpha} \quad \alpha\beta = \frac{\beta}{25\alpha} \Rightarrow 25\alpha^2 = 1 \Rightarrow \alpha^2 = \frac{1}{25} \Rightarrow \alpha = \pm\frac{1}{5}$ $\alpha = \frac{1}{5} \Rightarrow \beta = -1$ $\Rightarrow \beta > \alpha \Rightarrow$ اول یا چهارم $\Rightarrow$ راس سهمی $= -\frac{b}{2a} = -\frac{4}{-10} = \frac{2}{5}$ $\alpha = -\frac{1}{5} \Rightarrow \beta = +1$ $y = -5 \times \frac{4}{25} + \frac{8}{5} + 1 = \frac{9}{5}$ $\underline{\text{ناحیه اول}}$	۹
$a + b = a^2 + b^2 - 12 \Rightarrow S = S^2 - 2P - 12 \Rightarrow S = S^2 - 2S + 2 - 12$ $a.b = a + b - 1 \Rightarrow P = S - 1$ $S^2 - 3S - 10 = 0$ $\left.\begin{matrix} a.b \\ a+b \end{matrix}\right\}$ طبیعی $(S-5)(S+2) = 0$ $\underline{S = 5}\ \checkmark$ $S = -2\ \times$	۱۰