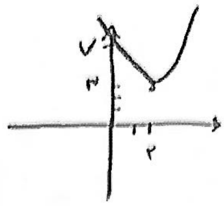
یازدهم سری B

پرسهای مفهومی

۱-

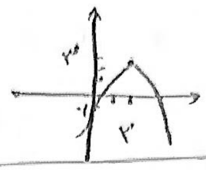
$y=x^2-4x+7$ | $\frac{4}{2}=2$ ، 3

$4-8+7$



$y=-x^2+4x-1$ | 2 ، 3

$-4+8-1$



۲-

$2x^2+(m+1)x+\frac{1}{2}m+2=0$

الف) دو ریشه متمایز $\Delta>0$

$m^2+1+2m-8(\frac{1}{2}m+2)>0$ $\quad -4m-16$

$m^2-2m-15>0$

$\frac{2\pm\sqrt{4+60}}{2}$ ($\sqrt{4+60}=8$) $\quad 5,\ -3$

$\begin{array}{c} -3 \quad 5 \\ + \mid - \mid + \end{array}$ $\quad (-\infty\ \ -3)\cup(5\ \ +\infty)$

ب) یک ریشه مضاعف $\Delta=0$

$m^2-2m-15=0$ $\quad m=-3$ ، $m=5$

ج) بدون جواب $\Delta<0$

$m^2-2m-15<0$ $\quad \begin{array}{c} -3 \quad 5 \\ + \mid - \mid + \end{array}$ $\quad (-3\ \ 5)$

د) ریشه داشته باشد $\Delta\geq0$

$m^2-2m-15\geq0$ $\quad \begin{array}{c} -3 \quad 5 \\ + \mid - \mid + \end{array}$ $\quad (-\infty\ \ -3]\cup[5\ \ +\infty)$

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$y=(m-2)x^2-2(m+1)x+10$

$(-2m-2)^2$

الف) دو نقطه منفی ← به ازای هیچ مقدار m

$4m^2+4+8m-40(m-2)>0$

$4m^2+4+8m-40m-80$ $\quad 4m^2-32m-76$

$\sqrt{1024+1216}$

Δ همواره مثبت

$P>0$

$\frac{10}{m-2}>0$

$m>2 \cap \varnothing$

$\frac{2m+2}{m-2}<0$ $\quad \begin{array}{c} -1 \quad 2 \\ + \mid - \mid + \end{array}$

$P<0$ $\quad \frac{10}{m-2}<0$ $\quad \begin{array}{c} 2 \\ - \mid + \end{array}$

ب)

$S<0$ $\quad \frac{2m+2}{m-2}<0$ $\quad \begin{array}{c} -1 \quad 2 \\ + \mid - \mid + \end{array}$

$(-1\ \ 2)$

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

الف) هر ۲ ناحیه

$\Delta>0 \longrightarrow$ همواره برقرار

$P<0 \quad \frac{1}{m-2}<0$

$(-\infty \quad 2)$

$\frac{-b}{2a}=-2 \qquad \frac{2m+2}{2m-4}=-2$ $\qquad m=1$

$2m+2=-4m+8$

$6m=6$

$m=1$

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$\frac{2x^2}{3}-\left(2\sin^{\frac{1}{2}}\alpha\right)x+\frac{3}{2}=0$

$\Delta \geq 0 \Rightarrow 4\sin^2\alpha-4\geq 0$

$4(\sin^2-1)\geq 0$

$\alpha>0$

$\sin^2\alpha\geq 1 \qquad 0\leq\sin^2\alpha\leq 1$

$\frac{2}{\frac{4}{3}}=\frac{3}{2}$

$\sin\alpha=\pm 1$

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$y=\frac{(3x^2-2x-1)(2x^2-3x-5)}{1-x^2}$

ساده شده

$\frac{\overset{-1}{\cancel{(x-1)}}(3x+1)\cancel{(x+1)}(2x-5)}{\cancel{(1-x)}\cancel{(1+x)}}=-6x^2+13x+5$

$\max \quad x=-\frac{b}{2a}=\frac{-13}{-12}$

$-\frac{6 \cdot 169}{144}+\frac{169}{12}+5$

$\frac{+169}{24}+5=\frac{289}{24}$

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$mx^2-(m+2)x-2=0 \qquad S=\frac{m+2}{m} \qquad P=-\frac{2}{m}$

$3\frac{m+2}{m}=5\left(-\frac{2}{m}\right)+7 \qquad 4x^2-6x-2$

$\frac{3m+6}{\cancel{m}}=\frac{-10+7m}{\cancel{m}} \qquad 16=4m \qquad 4=m$

S^2-2P

$\frac{9}{4}+\frac{4}{4}=\frac{13}{4}$

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$x^2-5x+2=0 \qquad \alpha\beta=2 \qquad S=5$

$\beta=\frac{2}{\alpha} \qquad \beta^2=\frac{4}{\alpha^2} \qquad P=2$

$\frac{4\alpha}{5\beta^2}+\frac{\beta^3}{5\beta^2}$

$\frac{4}{\alpha^2}$

$\frac{\alpha^3+\beta^3}{5}=\frac{S^3-3SP}{5} \qquad \frac{125-30}{5}=19$

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$y_1 = ax^2 + bx + c$ $\quad$ $y_2 = 2x + 10$ $\quad$ $c = 4$

$2 \Rightarrow 14$

$-3 \Rightarrow 4$

$4a + 2b + 4 = 14$

$9a - 3b + 4 = 4$

$12a + 6b = 30$

$18a - 6b = 0$ $\quad$ $b = 3$

$30a = 30$ $\quad$ $a = 1$

$x^2 + 3x + 4$

$\dfrac{-b}{2a} = \dfrac{-3}{2}$

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$2x^2 + (m+1)x + m + 6$

$2x^2 + (m+1)x + m + 6 = x$

$2x^2 + mx + m + 6 = 0$ $\quad$ $\Delta = 0$ $\quad$ $m^2 - 8m - 48$

$\dfrac{8 \pm \sqrt{64 + 192}}{2}$ $\quad$ $\overset{16}{}$ $\quad$ 12 غ ق ق $\quad$ -4 ق ق

$m = 12 \Rightarrow 2x^2 + 12x + 18 \to x^2 + 6x + 9 = 0$

غ ق ق

$(x+3)^2 = 0 \to x = -3 \to$ ناحیه اول ✗

$m = -4$

$m = -4$ $\quad$ $2x^2 - 4x + \dfrac{2}{2} \to x^2 - 2x + 1$

$(x-1)^2 \xrightarrow{x=1}$ ناحیه اول ق ق