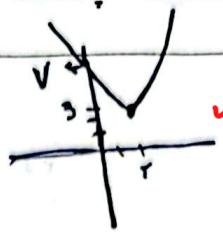
۲۰ عالی بنویس!

نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۱۲ ... کلاس ... یازدهم تجربی ... B

۱ (۲)

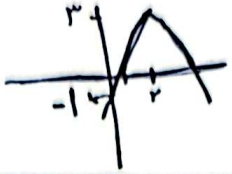
الف) $y = x^2 - 4x + 7$

$(x-2)^2 + 3$



ب) $y = -x^2 + 4x - 1$

$\max \left| \frac{-4}{-2} \right| = 2$



۲ (۲)

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

الف) $\Delta > 0 \Rightarrow (m+1)^2 - 4(2)\left(\frac{1}{2}m + 2\right) > 0$ ← $m \in R - [-3, 5]$

$\hookrightarrow m^2 - 2m - 15 \Rightarrow (m-5)(m+3)$

ب) $\Delta = 0 \Rightarrow m^2 - 2m - 15 \geq 0 \rightarrow m \leq m_2 5$, $m_2 -3$

ج) $\Delta < 0 \Rightarrow m^2 - 2m - 15 \geq 0 \rightarrow m \in (-3, 5)$

د) $\Delta \geq 0 \Rightarrow m^2 - 2m - 15 \geq 0 \Rightarrow m \in R - (-3, 5)$

۳ (۲)

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

الف) $S < 0 \rightarrow -\frac{b}{a} = \frac{2m+2}{m-2} < 0$ ← $m \in (-1, 2)$

$P > 0 \rightarrow \frac{c}{a} > 0 \rightarrow \frac{10}{m-2} > 0 \rightarrow m \in (2, +\infty)$

$\Delta > 0 \rightarrow 4(m+1)^2 - 4(10)(m-2) > 0 \rightarrow$ همواره مثبت

$\Rightarrow \emptyset$

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

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

$\alpha < 0 \ \beta > 0$

$|\alpha| > |\beta| \rightarrow \alpha + \beta < 0$

$\xrightarrow{\cap} -1 < m < 2 \Rightarrow m \in (-1, 2)$

۴ (۲)

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

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

ب) $-\frac{b}{2a} = x_s \Rightarrow -\frac{b}{2a} = -2 \Rightarrow \frac{b}{2a} = 2 \Rightarrow \frac{-2m-2}{2m-4} = 2 \Rightarrow \boxed{m = 1}$

↳ نحوه تقارن

۵ (۲)

$\frac{2}{3}x^2 - (2\sin\alpha)x + \frac{3}{2}$

$\Delta \geq 0 \rightarrow 4\sin^2\alpha - 4\left(\frac{3}{2}\right)\left(\frac{2}{3}\right) = 4\sin^2\alpha - 4 \geq 0 \Rightarrow \sin\alpha \geq 1$

$\Rightarrow \sin\alpha = 1, -1$

$S = -\frac{b}{a} > 0 \rightarrow \frac{2\sin\alpha}{\frac{2}{3}} > 0 \Rightarrow \sin\alpha > 0$

$\xrightarrow{1 \cap 2} \sin\alpha = 1 \Rightarrow \frac{2}{3}x^2 - 2x + \frac{3}{2} = 0 \rightarrow 4x^2 - 12x + 9 = 0$

$\rightarrow (2x-3)^2 = 0 \rightarrow x = \frac{3}{2}$

$$y_2 \frac{(2x^2-3x-1)(x^2-2x-5)}{1-x^2} = \frac{(x-1)(2x+1)(x+1)(x-5)}{(1-x)(1+x)}$$

$$\Rightarrow -6x^2+12x+5 \Rightarrow \max \left| \frac{-b}{2a} = \frac{12}{12} \right.$$

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

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

$$2x^2-2x-5 = x^2-2x-10 = (x-3)(x+4) \rightarrow 2x^2-2x-5 = (2x-5)(x+1)$$

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$$mx^2-(m+1)x+2=0$$

$$S = -\frac{b}{a}, \quad P = \frac{c}{a}$$

$$x_1 = 2P+1 \Rightarrow x_1 = \frac{2(m+1)}{m} = 2 \times \frac{-1}{-1} + 1 \rightarrow m = 4$$

$$\Rightarrow 4x^2-6x+2=0$$

$$\alpha^2+\beta^2 = S^2-2P \Rightarrow \left(\frac{3}{2}\right)^2 - 2\left(\frac{2}{4}\right) = \frac{11}{4}$$

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$$\frac{4\alpha+\beta}{2\beta^2} = \frac{4\alpha}{2\beta^2} + \frac{\beta}{2} \rightarrow \frac{\alpha}{2} + \frac{\beta}{2} \Rightarrow \frac{1}{2}(\alpha+\beta)$$

$$\Rightarrow \frac{1}{2}(S^2-2P)$$

$$x^2-5x+2=0$$

$$\Rightarrow \frac{1}{2}(25-4) = \boxed{b}$$

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

$$S=5$$

$$P=2$$

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$$y_1 = ax^2+bx+c \xrightarrow{x=0} c=y \rightarrow c=4$$

$$y_2 = 2x+10 \xrightarrow{x=2} y=14$$

$$\xrightarrow{x=-2} y=6$$

$$y_1 \xrightarrow{x=2} 4a+2b+c=14 \rightarrow 4a+2b=10 \rightarrow 10a=10 \rightarrow \begin{matrix} a=1 \\ b=3 \end{matrix}$$

$$y_2 \xrightarrow{x=-2} 9a-3b+c=4 \rightarrow 9a-3b=0 \rightarrow 3a=b$$

$$\Rightarrow y_1 = x^2+3x+4$$

$$x_S = -\frac{b}{2a} = -\frac{3}{2}$$

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$$y = 2x^2+(m+1)x+m+3$$

$$\hookrightarrow 2x^2+(m+1)x+m+3 = x \rightarrow 2x^2+mx+m+3=0 \rightarrow \Delta=0 \Rightarrow m^2-4(2m+12)=0$$

$$\rightarrow m^2-8m-48=0 \Rightarrow (m-12)(m+4)=0$$

$$\rightarrow m \begin{matrix} m=12 \\ m=-4 \end{matrix}$$

$$m<12$$

$$m=12 \rightarrow 2x^2+12x+12=0 \rightarrow x^2+6x+9=0 \Rightarrow x=-3 \text{ ضابطه} \Rightarrow m<12$$

$$m=-4 \rightarrow 2x^2-4x+2 \rightarrow x^2-2x+1=0 \Rightarrow x=1 \rightarrow y=2-2=0$$

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