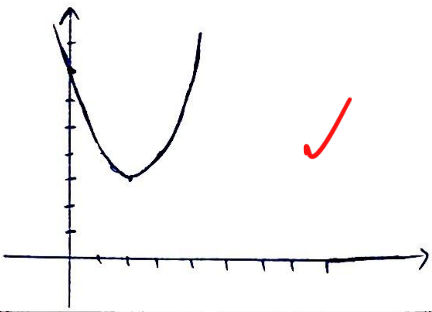
نام و نام خانوادگی ......علی صبری...... پاسخنامه تشریحی تکلیف شماره ..۱۱... کلاس ...یازدهم تجربی A...

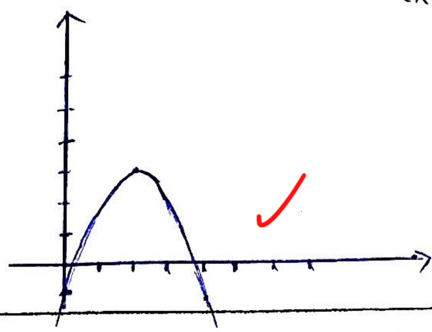
۲۰ عالی نوشتی!

۱ (۲)

الف) $y = x^2 - 4x + 7$ $\quad ext \left| \begin{matrix} 2 \\ 3 \end{matrix} \right.$



ب) $y = -x^2 + 4x - 1$ $\quad ext \left| \begin{matrix} 2 \\ 3 \end{matrix} \right.$



۲ (۲)

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

الف) $m \in (-\infty, -3) \cup (5, +\infty)$

$\Delta > 0 \to (m+1)^2 - 4m - 16 > 0 \to m^2 - 2m - 15 > 0$ $\quad \begin{matrix} & -3 & & 5 & \\ + & 0 & - & 0 & + \end{matrix}$

ب) $\Delta = 0 \to \begin{cases} m = -3 \\ m = 5 \end{cases}$ $\quad$ (ج) $\Delta < 0 \to m \in (-3, 5)$

د) $\Delta \geq 0 \to m \in (-\infty, -3] \cup [5, +\infty)$

۳ (۲)

الف) $y = (m-2)x^2 - 2(m+1)x + 10$ $\quad \{ \Delta > 0 \to 4(m+1)^2 - 40(m-2) > 0 \to 4m^2 - 32m + 84 > 0$

$\to m^2 - 8m + 21 > 0 \to$ همیشه برقرار ① $\quad S < 0 \to \frac{2m+2}{m-2} < 0$ $\quad \begin{matrix} & -1 & & 2 & \\ + & 0 & - & & + \end{matrix} \to -1 < m < 2$ ②

$P > 0 \to \frac{10}{m-2} > 0 \to m > 2$ ③ $\to$ ①②③ $\to m \in \emptyset$ به ازای هیچ مقدار m

ب) $\Delta > 0$ ✓

$P < 0 \to m < 2 \quad S < 0 \to -1 < m < 2 \quad \to -1 < m < 2$

۴ (۲)

الف) $\Delta > 0$ ✓ $\quad P < 0 \to m < 2 \quad \to m < 2$

ب) $x = \frac{-b}{2a} \to \frac{-b}{2a} = -2 \to \frac{2(m+1)}{2(m-2)} = -2 \to m + 1 = -2m + 4$

$3m = 3 \to m = 1$

۵ (۲)

$\frac{2}{3}x^2 - (2\sin\alpha)x + \frac{3}{2} = 0 \to \Delta \geq 0 \quad 4\sin^2\alpha - 4 \geq 0$

$\to \sin^2\alpha \geq 1 \to \sin\alpha = \pm 1 \to \alpha \in \{ k\pi + \frac{\pi}{2} \}$

$\sin\alpha = 1 \to \frac{2}{3}x^2 - 2x + \frac{3}{2} = 0 \to x = \frac{3}{2}$ ✓

$\sin\alpha = -1 \to \frac{2}{3}x^2 + 2x + \frac{3}{2} = 0 \to x = -\frac{3}{2}$ ✗ ریشه مثبت است

۶ (۲)

$$y=\frac{(3x^2-2x-1)(2x^2-3x-5)}{1-x^2}=\frac{3(x-1)(x+\frac{1}{3})(x+1)(x-2.5)\times 2}{(1-x)(1+x)}$$

$$=-3(x+\tfrac{1}{3})(x-2.5)\times 2=(-3x-1)(2x-5)=-6x^2+13x+5$$

$$\rightarrow y_{max}=\frac{-\Delta}{4a}=\frac{-(13^2+120)}{-24}=\frac{289}{24}$$

---

۷ (۲)

$$mx^2-(m+2)x-2=0 \rightarrow 3S=5P+7 \rightarrow 3\frac{m+2}{m}=-\frac{10}{m}+7$$

$$\rightarrow 3m+6=7m-10 \rightarrow 16=4m \rightarrow \boxed{m=4} \rightarrow \alpha^2+\beta^2=S^2-2P$$

$$S=\frac{6}{4}=1.5 \quad P=-\frac{2}{4}=-0.5 \rightarrow S^2-2P=2.25+1=3.25$$

---

۸ (۲)

$$x^2-5x+2=0 \rightarrow \frac{4\alpha+\beta^5}{5\beta^2} \xrightarrow[\beta=\frac{2}{\alpha}\rightarrow\beta^2=\frac{4}{\alpha^2}]{\alpha\beta=2 \text{ دو ریشه مثبت}} \frac{4\alpha}{5\beta^2}+\frac{\beta^3}{5}$$

$$=\frac{4\alpha}{5\frac{4}{\alpha^2}}+\frac{\beta^3}{5}=\frac{\alpha^3}{5}+\frac{\beta^3}{5}=\frac{S^3-3SP}{5}=\frac{125-30}{5}=\frac{95}{5}=\boxed{19}$$

---

۹ (۲)

$$y_1=ax^2+bx+4 \qquad y_2=2x+10 \rightarrow ax^2+bx+4=2x+10$$

$$ax^2+(b-2)x-6=0$$

$$\rightarrow \begin{cases} x=2 \rightarrow 4a+2b-10=0 \\ x=-3 \rightarrow 9a-3b=0 \end{cases} \rightarrow \begin{cases} 2a+b=5 \\ 3a-b=0 \end{cases} \rightarrow 5a=5 \rightarrow \boxed{a=1} \quad \boxed{b=3}$$

$$\rightarrow y_1=x^2+3x+4 \rightarrow x_{min}=\frac{-b}{2a}=\frac{-3}{2} \rightarrow \boxed{x=-\frac{3}{2}}$$

---

۱۰ (۲)

$$y=2x^2+(m+1)x+m+6 \rightarrow 2x^2+(m+1)x+m+6=x$$

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

$$\rightarrow \begin{cases} m=-4 \rightarrow 2x^2-4x+2=0 \rightarrow x=1 \checkmark \rightarrow \boxed{m=-4} \\ m=12 \rightarrow 2x^2+12x+18=0 \rightarrow x=-3 \times \quad x>0 \end{cases}$$

نامقبول