نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ...۱۲... کلاس ...یازدهم... A

۲۵ عالی نوشتی!

۱ (۲)

$y=(a-1)x^2+x+4 \rightarrow \frac{-b}{2a}=2 \rightarrow \frac{-1}{2a-2}=2 \rightarrow a=\frac{3}{4}$

$\rightarrow y=-\frac{1}{4}x^2+x+4 \rightarrow -\frac{1}{4}x^2+x+4=0 \rightarrow x^2-4x-12=0$

$\rightarrow \begin{cases} x=6 \checkmark \\ x=-2 \times \end{cases}$ مثبت $\rightarrow (6)$ ✓

۲ (۲)

$f(x)=mx^2-5x+m$

$a<0 \rightarrow m<0$

$\Delta>0 \rightarrow 25-4m^2>0 \rightarrow 4m^2<25 \rightarrow m^2<\frac{25}{4} \rightarrow -\frac{5}{2}<m<\frac{5}{2}$

$\xrightarrow{\cap} -\frac{5}{2}<m<0$ ✓

۳ (۲)

$\alpha=\frac{4-\sqrt{5}}{4} \quad \beta=\frac{4+\sqrt{5}}{4} \rightarrow S=2 \quad P=\frac{9-5}{9}=\frac{4}{9}$

$\rightarrow x^2-Sx+P=0 \rightarrow x^2-2x+\frac{4}{9}=0 \rightarrow 9x^2-18x+4=0$ ✓

۴ (۲)

$2x^2-8x+m+2=0 \rightarrow 3\alpha^2+\beta^2=2\alpha^2+2\beta^2+\alpha^2-\beta^2=2(\alpha^2+\beta^2)+(\alpha-\beta)(\alpha+\beta)=12$

$\alpha<\beta \rightarrow 2(S^2-2P)+\left(-\frac{\sqrt{\Delta}}{|a|}\right)(S)=12 \xrightarrow[P=\frac{m}{2}+1]{S=4} 2\left(16-2\left(\frac{m}{2}+1\right)\right)+\left(-\frac{\sqrt{32-8m}}{2}\right)(4)$

$=2(14-m)-2\sqrt{32-8m}=12 \rightarrow 28-2m-8\sqrt{12-3m}=12 \rightarrow 16-2m=4\sqrt{12-3m}$

$\rightarrow 8-m=2\sqrt{12-3m} \rightarrow m^2-16m+64=48-8m \rightarrow m^2-8m+16=0 \rightarrow (m=4)$ ✓

۵ (۲)

$ext\left|\begin{matrix}h\\k\end{matrix}\right. \rightarrow y=a(x-h)^2+k \rightarrow ext\left|\begin{matrix}2\\9\end{matrix}\right. \rightarrow y=a(x-2)^2+9 \xrightarrow{(0,5)} a=-1$

$\rightarrow y=-x^2+4x+8 \rightarrow -x^2+4x+8>0 \rightarrow x^2-4x-8<0$

	$-\infty$		$1-\sqrt{3}$		$1+\sqrt{3}$		$+\infty$
		+	۰	−	۰	+	

$\rightarrow (1-\sqrt{3}, 1+\sqrt{3})$ ✓

$\alpha x^2 - 7x + 9\beta = 0 \rightarrow \frac{1}{\alpha} + \frac{1}{\beta} = \frac{S}{P} = \frac{\frac{7}{\alpha}}{\frac{9\beta}{\alpha}} = \frac{7}{9\beta} \xrightarrow{\beta = \frac{2}{3}} \frac{7}{9\beta} = \boxed{\frac{7}{6}}$ ✓ (۲)

۶

$\begin{cases} \alpha\beta = \frac{9\beta}{\alpha} \rightarrow \alpha^2\beta = 9\beta \rightarrow \alpha^2 = 9 \\ \frac{7}{\alpha} = \alpha + \beta \rightarrow 7 = \underbrace{\alpha^2}_{9} + \beta\alpha \xrightarrow{\beta > 0} \boxed{\alpha = -3} \end{cases}$ $\boxed{\beta = \frac{2}{3}}$

$x^2 + mx - 2m = 0 \rightarrow \alpha^2 = -m\alpha + 2m \rightarrow \alpha^2 - m\beta = 8 \rightarrow -m\alpha + 2m - m\beta = 8$ (۲)

$\rightarrow 2m - m\underbrace{(\alpha+\beta)}_{-m} = 8 \rightarrow m^2 + 2m = 8 \rightarrow m^2 + 2m - 8 = 0 \rightarrow \begin{cases} m = -4 \\ m = 2 \end{cases}$

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$\Delta > 0 \rightarrow \boxed{m = 2} \rightarrow S = -m = -2$ ✓

$f(x) = mx^2 + 6x + \frac{m}{2} + 7 \rightarrow \frac{-\Delta}{4a} = 8 \rightarrow 32m = -(144 - 24m^2 - 48m)$ (۲)

$\rightarrow 24m^2 - 64m - 144 = 0 \rightarrow m^2 - 8m - 6 = 0 \rightarrow \begin{cases} m = 4 & \times \quad \Delta > 0 \\ m = -2 & \checkmark \end{cases}$

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$\rightarrow -12x^2 + 64x + 96 = 0 \rightarrow x^2 - 8x - 12 = 0 \rightarrow \begin{cases} x = 12 \rightarrow \boxed{k = 12} \checkmark \\ x = -1 \end{cases}$

$a(x-1)^2 + 4 \xrightarrow{(0,6)} a = -\frac{1}{2} \rightarrow y = -\frac{1}{2}x^2 + 2x + 6$ (۲)

$\rightarrow \frac{1}{\alpha} + \frac{1}{\beta} = \frac{S}{P} = \frac{4}{-8} = -\frac{1}{2}$ ✓

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$x^2 - (6a + 6)x + (12a^2 + 24a + 12) = 0$

$\rightarrow x = 2 \rightarrow 4 - 16a - 16 + 12a^2 + 24a + 12 = 0 \rightarrow 12a^2 + 8a - 0 = 0$ (۲)

۱۰

$\rightarrow \begin{cases} a = +1 \rightarrow x^2 - 16x + 60 = 0 \rightarrow \begin{cases} x = 10 \\ x = 6 \end{cases} \\ a = -\frac{1}{3} \rightarrow x^2 - \frac{16}{3}x + \frac{60}{9} = 0 \rightarrow \begin{cases} x = 10 \\ x = \frac{6}{3} \end{cases} \end{cases}$ $\rightarrow 6, \underbrace{\frac{2}{3}}$ ✓