Subject.

Day. Month. Year. ۲۳ تکلیف دهم ریاضی C ایلیا ماه‌سالار

(۱

$$a(x-x_s)^2+y_s=y$$

$$a(x+1)^2+9 \quad y \xrightarrow{(3,1)} a(\cancel{3+1})^2+9=1$$

$$16a+9=1$$

$$16a=-8$$

$$-\frac{1}{2}x^2-x-\frac{1}{2}+9=y \longleftarrow a=-\frac{1}{2}$$

$$\boxed{-\frac{1}{2}x^2-x+\frac{17}{2}=y}$$

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$$m^2-8(m+6)>0$$

$$m^2-8m-48>0$$

$$(m-12)(m+4)>0$$

	-4		12	
$+$	0	$-$	0	$+$

$$m \in (-\infty,-4)\cup(12,+\infty)$$

۳

$$\frac{۲m-۱}{-۳} = \frac{۱}{\frac{۲-m}{۳}} = \frac{۳}{۲-m}$$

$$۴m - ۲m^۲ - ۲ + m = -۹$$

$$-۲m^۲ + ۵m + ۷ = ۰$$

$$m = \frac{-۵ \pm \sqrt{\cancel{۲۵+۵۶}\ ۸۱}}{-۴} \to \frac{-۱۴}{-۴} = ۳,۵ \qquad \frac{۴}{-۴} = -۱$$

$$(۲m-۱)^۲ - ۱۲(۲-m) > ۰$$

$$۴m^۲ - ۴m + ۱ - ۲۴ + ۱۲m > ۰$$

$$۴m^۲ + ۸m - ۲۳ > ۰$$

$m = -۱$ $\qquad$ $m = ۳,۵$

$$۴ - ۸ - ۲۳ < ۰ \qquad \cancel{۴} \times \frac{۴۹}{\cancel{۴}} + \cancel{۸}^{۴} \times \frac{۷}{\cancel{۲}} - ۲۳$$

$$\boxed{m = ۳,۵} \Leftarrow ۴۹ + ۲۸ - ۲۳ > ۰$$

۴

$$x^۲ - x - ۴ = ۰ \qquad x_۱ + x_۲ = ۱$$

$$x_۱ x_۲ = -۴$$

$$\underbrace{x_1^3+x_2^3}+\frac{1}{x_1}+\frac{1}{x_2} \qquad \frac{x_1+x_2}{x_1x_2}=\frac{1}{-4}$$

$$S^3-3SP=1^3-3\times1\times(-4)=13$$

$$S'=\frac{51}{4}$$

$$\left(x_1^3+\frac{1}{x_2}\right)\left(x_2^3+\frac{1}{x_1}\right)=\underbrace{x_1^3x_2^3}_{-64}+\underbrace{x_1^2+x_2^2}_{S^2-2P=1+4=5}+\frac{1}{x_1x_2}$$

$$-64+5+\frac{1}{1}=-58=P'$$

$$\boxed{x^2-S'x+P'=x^2-\frac{51}{4}x-58}$$

$$\left(\sqrt[3]{x^2}+\frac{1}{\sqrt[3]{x^2}}+1\right)\left(\sqrt[3]{x^2}-1\right)=2\sqrt[3]{x}$$ ه

$$x\sqrt[3]{x}+\cancel{1}+\cancel{\sqrt[3]{x^2}}-\cancel{\sqrt[3]{x^2}}+\frac{1}{\sqrt[3]{x^2}}-\cancel{1}=2\sqrt[3]{x}$$

$$\sqrt[3]{x^4}+\frac{1}{\sqrt[3]{x^2}}-2\sqrt[3]{x}=\left(\sqrt[3]{x^2}-\frac{1}{\sqrt[3]{x}}\right)^2$$

$$\sqrt[3]{x^2}=\frac{1}{\sqrt[3]{x}} \qquad \boxed{x_1=1}$$

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$$\alpha = 3\beta$$

$$3\beta \cdot \beta = \frac{4}{3}$$

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

$$\beta^2 = \frac{4}{9} \Rightarrow \beta = \pm\frac{2}{3} \Rightarrow \alpha = \pm 2$$

$$\frac{a}{3} = \begin{cases} 2 + \frac{2}{3} = \frac{8}{3} \\ -2 - \frac{2}{3} = -\frac{8}{3} \end{cases} \Rightarrow a = \pm 8$$

$$\boxed{8 - (-8) = 16}$$

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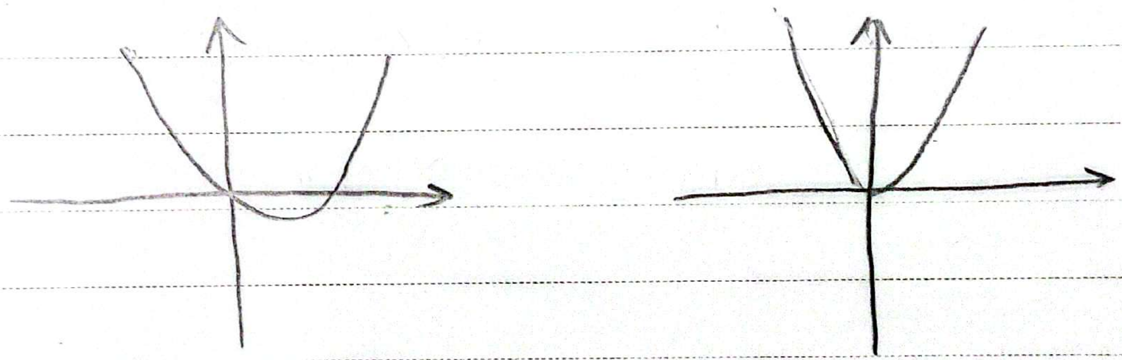

$\Delta > 0 \quad (3+2a)^2 - 4a \geq 0$ $\qquad$ $\Delta = 0$

$9 + 4a^2 + 12a - 4a \geq 0$ $\qquad$ $a > 0$

$a > 0$

$\Delta < 0 \Rightarrow +$ همواره $4a^2 + 8a + 9 \geq 0$ $\qquad$ $S = 0 \quad \frac{3+2a}{-a} = 0$

$S > 0 \quad \frac{3+2a}{-a} > 0$ $\qquad$ $P = 0$

$P = 0$

$$\frac{2a+3}{-a} \geq 0 \Rightarrow \begin{array}{c|ccccc} & & -\frac{3}{2} & & 0 & \\ \hline & + & | & - & | & + \end{array}$$

$$a = \{(-\infty, -\tfrac{3}{2}] \cup [0, +\infty)\}$$

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$$x_S = \frac{۲}{-۲} = +1 = \frac{\pm a}{۲} \Rightarrow a = ۲$$

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$$1 = x^۲ + ۲x - ۲$$
$$۰ = x^۲ + ۲x - ۳$$
$$۰ = (x-1)(x+۳) \qquad x = -۳ \quad = 1$$

$$1 = -1 - ۲ + b \qquad \boxed{ab = ۸}$$
$$۴ = b$$

(۹)

$$S: x_1 + x_2 = \frac{a}{۲} \qquad x_1 x_2 = \frac{b}{۲}$$

$$(x_1 - ۰/۵) + (x_2 - ۰/۵) = \frac{a-۲}{۲} = \frac{-b}{۲a}$$

$$\boxed{\left[\frac{-\cancel{۴}\times 1}{۲\cancel{۴}}\right] = -1} \qquad \frac{a-۲}{۲} = -\frac{1}{۲}$$

$$۲a - ۴ = -۲$$
$$۲a = ۲$$
$$S = \frac{1}{۲} \Leftarrow a = 1$$

$$(x_1 - \tfrac{1}{۲})(x_2 - \tfrac{1}{۲}) = \underbrace{x_1 x_2}_{\frac{b}{۲}} \underbrace{- \frac{x_1}{۲} - \frac{x_2}{۲}}_{\cancel{-\frac{1}{۲}(\frac{1}{۲}) + \frac{1}{۴}}} + \frac{1}{۴} = \frac{-۶}{۲\times 1} = -۳$$

$$b = -۶$$

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$$x^2 + 6x + m - x^2 - 2x + 3m = 0 \qquad (10)$$

$$8x + 4m = 0$$

$$8x = -4m$$

$$x = -\frac{1}{2}m$$

$$P_1 = m = -\frac{1}{2}m \times \bigcirc \to -2$$

$$P_2 = -3m = -\frac{1}{2}m \times \bigcirc \to 6$$

$$6 - (-2) = \boxed{8}$$