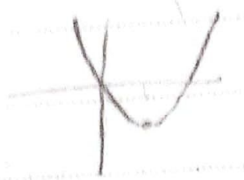
Subject. دهم ریاضی

Day. Month. Year. ۲۵ ...

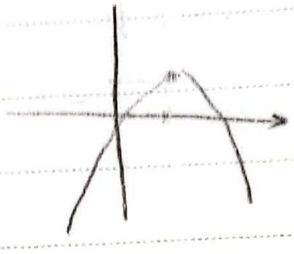
①

۱) $S \begin{cases} x = \frac{2}{4} \\ y = \frac{4}{-12} \end{cases}$



ناحیه ۳و۴

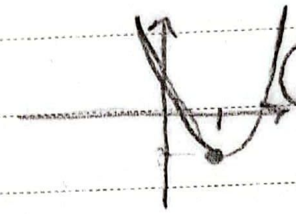
۲) $S \begin{cases} x = \frac{4}{2} = 2 \\ y = \frac{16}{4} = 4 \end{cases}$



ناحیه همه

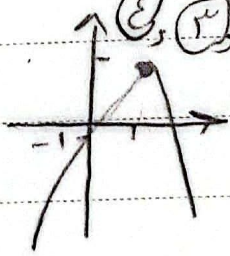
②

الف) $S \begin{cases} x = \frac{5}{4} \\ y = \frac{25-16}{-8} = \frac{9}{-8} \end{cases}$



ناحیه ①، ②، ④

ب) $S = \begin{cases} x = \frac{4}{2} = 2 \\ y = \frac{16-4}{+4} = 3 \end{cases}$



ناحیه ①، ③، ④

③

$\alpha + \beta = 1$

$\alpha \cdot \beta = -3$

$\alpha - \beta = \sqrt{1+12} = \sqrt{13}$

الف) $\frac{\alpha+\beta}{\alpha-\beta} = \frac{1}{\sqrt{13}} = \frac{\sqrt{13}}{13}$

ب) $\alpha^2 + \beta^2 = S^2 - 2P = 1 + 6 = 7$

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ج) $\alpha^2+\beta^2 = S^2 - 2P = 1+9 = 10$

د) $\alpha^3-\beta^3 = (\alpha-\beta)^3 + 3\alpha\beta(\alpha-\beta) = (\sqrt{13})^3 - 9\sqrt{13}$

$13\sqrt{13} - 9\sqrt{13} = 4\sqrt{13}$

(ه)

$a = 4$ یا $a^2 - 4a < 0$

$a(a-4) < 0$

	0		4	
+	∄	−	0	+

$a \in (0, 4)$

(و)

$3x^2 - 12x - a = 0$

$S = 4$

$P = \frac{-a}{3}$

$3\alpha^2 - 12\alpha = a$

$\alpha^2 - 4\alpha = \frac{a}{3}$

$\alpha^2+\beta^2 + \alpha^2 - 4\alpha = 7$ ($\frac{a}{3}$)

$14 + \frac{2a}{3} + \frac{a}{3} = 7$ $\quad a = -9$

$3x^2 - 12x + 9 = 0$

$3(x^2 - 4x + 3) = 0$

$3 \swarrow \searrow 1$

$\frac{-9}{+3} = -3$

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(۶)

$$\frac{\cancel{2a+3+7-2a}}{2}=b$$

$$5=b$$

$a=2 \rightarrow (3,5)\ (7,0)$ ✗

$a=3 \rightarrow (1,1)\ (9,1)$ ✓ غ‌ق‌ق

$7-2a>0 \quad 7/2>a \rightarrow 3, 2, 1$ ← غ‌ق‌ق

$7>2a$

$(1,1)(9,1) \quad (3,5)(7,0)$

$$a(x-x_S)^2+y_S=a(x-5)^2+3$$

$$16a+3=1 \qquad a=-1/8$$

$$-\frac{1}{8}x^2+\frac{10}{8}x-\frac{25}{8}+3=\frac{-x^2}{8}+\frac{5x}{4}-\frac{1}{8}$$

$1-1/8-0 \quad \frac{1}{8}$

(۷)

$$ax^2-ax-b=0 \qquad \alpha+\beta=1 \qquad \alpha\beta=\frac{-b}{a}$$

$$40\beta^2+20\alpha^2-20\beta=0$$

$$20\beta^2+20\beta^2+20\alpha^2-20\beta \cdot b+20(1^2+2\frac{b}{a})$$

$$\frac{20}{a}b \qquad \frac{2b+a}{a}$$

$$\frac{20}{a}b+\frac{40b+20a}{a}=17$$

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$$۲۰b + ۴۰b + ۲۰a = ۱۷a$$

$$۹۰b + ۲a = ۰$$

$$۲۰b + a = ۰ \qquad ۲۰b = -a$$

$$\frac{\sqrt{a^۲ - ۴ab}}{|a|} = \frac{\sqrt{۴۰۰b^۲ + ۸۰b^۲}}{۲۰b} = \sqrt{\frac{۴۸۰b^۲}{۴۰۰b^۲}} = \sqrt{\frac{۶}{۵}}$$

$$\frac{۴\sqrt{۵}}{۵}$$

(۱)

$$S = \frac{-۵+۱}{۲} = -۲$$

$$a(m+۲)^۲ - \frac{۱}{۲} \xrightarrow{(۰,\frac{۶}{۲})} ۴a - \frac{۱}{۲} = \frac{۶}{۲}$$

$$۴a = ۲ \rightarrow a = \frac{۱}{۲}$$

$$\beta \rightarrow \frac{۱}{۲}(m+۲)^۲ - \frac{۱}{۲} = \frac{۹}{۲} - \frac{۱}{۲} = ۴$$

α	β
+	−	+

$a > ۰$ (۹)

$$\alpha + \beta = -۲$$

$$\alpha \cdot \beta = a$$

$$۳۶ - ۴a > ۰ \quad ۹ > a \Rightarrow ۹ > a > ۰$$

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$\frac{9 \pm \sqrt{49-4a}}{2} \rightarrow 4, \sqrt{9-a}$

$2(\alpha^2+\beta^2)+\alpha^2 = 72-8a+\alpha^2 =$

$(\alpha+\beta)^2-2\alpha\beta = 49-14a$

$72+8a+9+9-a+4\sqrt{9-a} = 100$

$90-5a+4\sqrt{9-a} = 18+12\sqrt{}$

$-a+4\sqrt{9-a} = -5+12\sqrt{}$ (10)

$\boxed{1=a} \leftarrow$

$\sqrt{\frac{1}{\alpha}}+\sqrt{\frac{1}{\beta}} = \frac{\sqrt{\alpha}}{\alpha}+\frac{\sqrt{\beta}}{\beta} =$

$\frac{\beta\sqrt{\alpha}+\alpha\sqrt{\beta}}{\beta\alpha} = 5 \qquad \beta\sqrt{\alpha}+\alpha\sqrt{\beta} = \frac{5}{12}$

$\frac{1}{12}$

$\frac{25}{144} = \beta^2\alpha+\alpha\beta^2+2\alpha\beta\sqrt{\alpha\beta}$

$\frac{25}{144} = \alpha\beta(\alpha+\beta+2\sqrt{\alpha\beta})$

$\frac{1}{4} \cdot \frac{1}{2}$

$\frac{25}{144} - \frac{11}{144} = \alpha+\beta$

$\frac{11^2}{12^2} = \alpha+\beta$

$\frac{m+15}{144} = \frac{1^2}{12^2} \qquad m+15 = 11^2$

$m = -1$

$-m^2+2m+2=0 \qquad \rho = \boxed{-2}$