Subject.

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$$(2\beta-2)^2\beta = 2\beta^3+4\beta-2\beta^2 \quad (1)$$

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

$$\frac{20-4\beta+12\beta^2+4\beta-20\beta^2}{2(2\beta-2)}=$$

$$\text{طرف} \rightarrow \frac{(4-12)}{2}=\frac{-8}{4} \quad (2)$$

$$\frac{-b}{2a}=\frac{2}{4} \Rightarrow -4b=4a \quad -2b=2a \quad -\frac{2}{4}b=a$$

$$-\frac{2}{4}bx^2+bx+c=y \longrightarrow -\frac{2}{4}b\times\frac{9}{4}+bx\frac{3}{2}+c=-4$$

$$-\frac{2}{4}bx\frac{81}{16}+bx3+c=-4$$

$$\begin{cases} -2b+c=-4 \\ -b+c=-4 \\ 2b-2c=8 \end{cases} \rightarrow -b-c=4 \quad b+c=4,\ -b+c=-4 \Rightarrow c=0,\ b=4$$

$$a=\frac{-8}{4}$$

$$\frac{\sqrt{\Delta}}{|a|}=\frac{3}{2}k \qquad \frac{\sqrt{4k^2-20}}{1}=\frac{3}{2}k \quad (3)$$

$$\left[\frac{k^2}{2}\right]=\left[\frac{9}{2}\right]=4$$

$$\frac{2\sqrt{k^2-5}}{1}=\frac{4}{3}k$$

$$2\sqrt{k^2-5}=2k$$

$$9k^2-45=4k^2 \Rightarrow 5k^2-45=0$$

$$k^2=9 \Leftarrow k^2-9=0$$

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$\frac{-b}{a}$

(٤)

$\alpha^2 + \beta^2 = S^2 - 2P \rightarrow \frac{c}{a}$

$\frac{2^2 + 2(-5)}{2} = -1 \Rightarrow \frac{-b}{a} = -1 \quad b = a$

$\frac{b^2 - 4ac}{-4a} = \frac{b^2 - 4bc}{-4b} = \frac{b(b-4c)}{-4b} = 1$

$a(x+1)^2 + 1 = y = ax^2 + 2ax + a + 1$

$\alpha^2 + \beta^2 = S^2 - 2P = 4 - 2\left(\frac{a+1}{a}\right) = 5$

$\frac{2a+2}{a} = -1 \Rightarrow 2a + 2 = -a \Rightarrow$

$3a = -2 \quad a = -\frac{2}{3}$

$a + 1 = -\frac{2}{3} + 1 = \frac{1}{3}$

$\alpha < \beta < \frac{9}{4}$

	α		β	
	−	+	+	−

(٥)

$-\frac{81}{4} + \frac{45}{2} + m < 0 \qquad 2\alpha + 4m > 0$

$\frac{-81 + 90}{4} + m < 0 \qquad 4m > -2\alpha$

$m < -\frac{9}{4} = -2{,}25 \qquad m > \frac{-2\alpha}{4} = -4{,}25$

$-4{,}25 < m < -2{,}25 \rightarrow -5, -4, -3, -2 \Rightarrow 4$

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(٩)

$m \neq 0$

$$\frac{144 - 6m(5m-1)}{-6m} = 9$$

$$144 - 30m^2 + 6m = -8m$$

$$-30m^2 + 14m + 144 = 0$$

$$15m^2 - 7m - 72 = 0$$

$$m = \frac{7 \pm \sqrt{49 + 4320}}{30} = \frac{7 \pm 67}{30}$$

$$= \frac{-60}{30} \text{ or } \frac{74}{30} = 3$$

$$a = \frac{-b}{2a} = \frac{9}{3} = 3$$

(٧)

$$\alpha\beta = a^2$$

$$2a - 1 = a^2$$

$$0 = a^2 - 2a + 1$$

$$0 = (a-1)^2$$

$$\boxed{1 = a}$$

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$x^2 = t$ (۸)

$t^2 - 7t - 5 = 0$

$t = \frac{7 \pm \sqrt{49 + 20}}{2} = \frac{7 + \sqrt{69}}{2}$ (مثبت)

$x^2 = \frac{7 + \sqrt{69}}{2} = S_0$ $\Rightarrow$ $2p^2 = \frac{69 + 7\sqrt{69}}{2}$

$\frac{69 + 7\sqrt{69}}{2}$ (۹)

$-4x - 4 = kx^2 - 4x - 9$

$0 = kx^2 - 2$

$2 = kx^2$ $\quad x = \frac{4}{12}$

$1 = \frac{1}{4} \times \frac{12}{k^2}$

$1 = \frac{2}{k}$

$2 = k$

$y_S = \frac{12 - 2 \times 2 \times (-9)}{-4 \times 2}$ (۸)

(۱۰) $-mx^2 + mx + 1 \neq -m - x$

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

$(m+1)^2 + 4m(1+m) < 0$

$m^2 + 2m + 1 + 4m + 4m^2 < 0$

$5m^2 + 6m + 1 < 0$ $\quad m = (-1, -\frac{1}{5})$

$-1 \quad -\frac{1}{5}$

$+ \mid - \mid +$