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

نسبت $x = 2$ است $\Rightarrow x_s = 2 \Rightarrow \frac{-b}{2a} = \frac{-1}{2a-2} = 2 \Rightarrow \varepsilon a - \varepsilon = -1$
 $\Rightarrow \varepsilon a = 1$
 $\Rightarrow a = \frac{1}{\varepsilon}$

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

$$\frac{-1}{\varepsilon} x^2 + x + 1 = 0$$

$$\Delta = 1 + 1 = 2$$

$$x = \frac{-1 \pm \sqrt{2}}{\frac{-1}{\varepsilon}} \Rightarrow \begin{cases} x_1 = -2 \\ x_2 = 4 \end{cases}$$

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

$$\Delta \gamma_0 \Rightarrow 2\omega - \varepsilon m^2 \gamma_0 \Rightarrow \varepsilon m^2 < 2\omega$$

x	x_1	x_2
$f(x)$	$- \phi + \phi -$	$\phi -$

$$\Rightarrow m^2 < \frac{2\omega}{\varepsilon}$$

$$a < 0 \Rightarrow m < 0$$

$$\textcircled{1} \cap \textcircled{2} \Rightarrow -\frac{\omega}{\varepsilon} < m < 0 \Rightarrow m \in (-\frac{\omega}{\varepsilon}, 0)$$

$$p = \frac{1-\sqrt{\omega}}{\omega} \times \frac{1+\sqrt{\omega}}{\omega} = \frac{1-\omega}{\omega} = \frac{\varepsilon}{\omega}$$

$$y = x^2 - sx + p$$

$$\Rightarrow y = x^2 - 2x + \frac{\varepsilon}{\omega}$$

$$\Rightarrow 9y = 9x^2 - 18x + \varepsilon$$

$$s = \frac{1-\sqrt{\omega}}{\omega} + \frac{1+\sqrt{\omega}}{\omega} = \frac{2}{\omega} = 2$$

$$2x^2 - 18x + m + 2 = 0$$

$$s = \frac{-b}{a} = \frac{1}{\varepsilon} = \varepsilon \Rightarrow \alpha + \beta = \varepsilon \Rightarrow \beta = \varepsilon - \alpha$$

$$\omega \alpha^2 + \beta^2 = 12 \Rightarrow \omega \alpha^2 + (\varepsilon - \alpha)^2 = 12 \Rightarrow \omega \alpha^2 + \alpha^2 - 2\varepsilon \alpha + \varepsilon^2 = 12$$

$$\Rightarrow \varepsilon \alpha^2 - 2\varepsilon \alpha + \varepsilon^2 = 0$$

$$\Rightarrow \alpha^2 - 2\alpha + 1 = 0$$

$$\Rightarrow (\alpha - 1)^2 = 0 \Rightarrow \alpha = 1, \beta = \varepsilon$$

$$p = \frac{\varepsilon}{a} = \frac{m+2}{\varepsilon} = 2$$

$$\Rightarrow m+2=4 \Rightarrow m=2$$

$$y = ax^2 + bx + c \xrightarrow{(0, \omega)} c = \omega$$

$$\xrightarrow{S(2, 9)} \frac{-b}{2a} = 2 \Rightarrow \varepsilon a = -b$$

$$y = ax^2 - \varepsilon ax + \omega$$

$$\xrightarrow{(2, 9)} 9 = \varepsilon a - 18a + \omega \Rightarrow -\varepsilon a = \varepsilon \Rightarrow a = -1$$

$$y = -x^2 + \varepsilon x + \omega$$

$$-x^2 + \varepsilon x + \omega \gamma_0$$

$$\xrightarrow{a+c=b} -1, \omega$$

-1	ω
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$$(-1, \omega)$$

$$\alpha x^2 - \sqrt{x} + 9\beta = 0$$

-4

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

$$\xrightarrow{\alpha=3} 3x^2 - \sqrt{x} + 9\beta = 0 \quad S = \alpha + \beta = \frac{\sqrt{x}}{3} \Rightarrow 3 + \beta = \frac{\sqrt{x}}{3} \Rightarrow \beta = \frac{-2\sqrt{x}}{3} \rightarrow \text{غير قابل قبول}$$

$$\xrightarrow{\alpha=-3} -3x^2 - \sqrt{x} + 9\beta = 0 \quad S = \alpha + \beta = -\frac{\sqrt{x}}{3} \Rightarrow -3 + \beta = -\frac{\sqrt{x}}{3} \Rightarrow \beta = \frac{2\sqrt{x}}{3}$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{1}{3} + \frac{3}{2} = \frac{-2+9}{4} = \frac{7}{4}$$

$$x^2 + mx - 2m = 0 \Rightarrow \beta^2 + m\beta - 2m = 0 \Rightarrow m\beta = 2m - \beta^2$$

-5

$$\alpha^2 - m\beta = 1 \Rightarrow \alpha^2 + \beta^2 - 2m = 1 \Rightarrow \alpha^2 + \beta^2 = 2m + 1 \Rightarrow S^2 - 2p$$

$$S = -m \quad p = -2m$$

$$\Rightarrow m^2 + 4m = 2m + 1 \Rightarrow m^2 + 2m - 1 = 0$$

$$(m+2)(m-1) = 0$$

$$\xrightarrow{m=2} x^2 + 2x - 4 = 0 \quad \Delta = b^2 - 4ac = 4 + 16 = 20 > 0 \quad m=2, m=-2$$

قابل قبول

$$\xrightarrow{m=-2} x^2 - 2x + 1 = 0 \quad \Delta = b^2 - 4ac = 4 - 4 = 0 \rightarrow \text{غير قابل قبول}$$

$$S = -m = -2$$

$$y = mx^p + \varepsilon x + \frac{m}{p} + v$$

-1

$$y_s = \frac{-\Delta}{\varepsilon a} = \frac{pm^p + pm - 14}{\varepsilon m} = 1 \Rightarrow$$

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$$pm^p + pm - 14 = pm \Rightarrow pm^p - pm - 14 = 0$$

$$\Rightarrow m^p - pm - 1 = 0 \quad (m - \varepsilon)(m + p) = 0$$

$$m = \varepsilon \quad m = -p$$

$$\xrightarrow{m = \varepsilon} y = \varepsilon x^p + \varepsilon x + 4 \rightarrow \Delta = 14 - 1\varepsilon\varepsilon < 0$$

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$$\xrightarrow{m = -p} y = -px^p + \varepsilon x + 4$$

$$-px^p + \varepsilon x + 4 = 0 \Rightarrow x^p - px - 4 = 0$$

$$\xrightarrow{a+c=b} x = -1 \quad x = 4 \rightarrow \text{مستعار}$$

$$\boxed{k = 4} \leftarrow \text{است}$$

$$y = ax^r + bx + c \xrightarrow{(0, r)} c = r$$

$$\xrightarrow{S(r, y)} \frac{-b}{ra} = r \Rightarrow -b = \varepsilon a$$

$$y = ax^r - \varepsilon a x + \varepsilon \xrightarrow{(1, 4)} 4 = \varepsilon a - 1a + \varepsilon$$

$$\Rightarrow -\varepsilon a = r \Rightarrow a = -\frac{1}{r}$$

$$y = -\frac{1}{r}x^r + rx + \varepsilon \quad \frac{1}{\alpha} + \frac{1}{\beta} = \frac{\alpha + \beta}{\alpha\beta} = \frac{S}{P}$$

$$S = \frac{-b}{a} = \frac{-r}{-\frac{1}{r}} = \varepsilon = \frac{\varepsilon}{-1} = \boxed{-\frac{1}{r}}$$

$$P = \frac{\varepsilon}{-\frac{1}{r}} = -1$$

$$x^r - (\varepsilon a + \varepsilon)x + (ra^r + 4a + r) = 0$$

$$\xrightarrow{x=r} r - 1a - 1 + ra^r + 4a + r = 0$$

$$\Rightarrow ra^r - ra - 1 = 0 \quad a+b+c=0 \Rightarrow a=1 \quad a=-\frac{1}{r}$$

$$a=1 \rightarrow x^r - 1x + 1r = 0 \quad \Delta = 4\varepsilon - \varepsilon 1 = 14$$

$$x = \frac{1 \pm \sqrt{14}}{r} \Rightarrow \boxed{x_1 = r} \Rightarrow x_r = r$$

$$a = -\frac{1}{r} \rightarrow x^r - \frac{1}{r}x + \frac{\varepsilon}{r} = 0 \quad \Delta = \frac{4\varepsilon}{9} - \frac{14}{r} = \frac{14}{9}$$

$$\alpha = \frac{\lambda/3 + 1}{\lambda}$$

$$\boxed{\alpha_1 = \frac{\lambda}{3}}$$

$\alpha_p = p$