

کلاس یازدهم - A

پایه ششم - ۱۹

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

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

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

$$x^2 - 2x = 0 \quad | x^2 - 2x = 0 \Rightarrow x = 1$$

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

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

$$x^2 - 12x + 36 = 0$$

$$x^2 - 12x + 36 = 0$$

$$-12x + 36 = 0$$

$$12x = 36 \Rightarrow x = \frac{36}{12} \Rightarrow x = 3$$

$$x = \frac{1}{2} \Rightarrow \frac{1}{4} - \frac{1}{2} + 1 = 0 \Rightarrow x = 1$$

$$- \frac{1}{2} \Rightarrow \frac{1}{4} + \frac{1}{2} + 1 = 0 \Rightarrow x = -1 \quad x_1 - x_2 = 1 - (-1) = 2$$

$$\sqrt{\frac{1}{x_1}} + \sqrt{\frac{1}{x_2}} = 2$$

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

$$\Rightarrow \sqrt{\frac{1}{x_1}} + \sqrt{\frac{1}{x_2}} = 2 \quad x_1 = \frac{1}{x} \quad x_2 = \frac{1}{x}$$

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

$$mx^2 + x + 1 = 0 \quad -x^2 + x + 1 = 0 \quad p = -1$$

$$x^2 + kx - 9 = 0$$

$$a + b = 1 \quad a \cdot b = -9$$

$$b = -a + 1$$

$$a \cdot b = -9 = (-a + 1)(a) = -a^2 + a - 9$$

$$\Rightarrow a = 1 \quad b = -1$$

$$a = -1 \quad b = 1$$

$$\begin{pmatrix} 1 \\ -1 \end{pmatrix} \begin{pmatrix} 1 \\ 1 \end{pmatrix} = 0 \quad \leftarrow \begin{matrix} -a^2 + a - 9 = 0 \\ a^2 - a - 9 = 0 \end{matrix}$$

$$x^2 + kx - 9 = 0 \quad x^2 + kx - 9 = 0$$

$$k = -1 \Rightarrow k = -1$$

$$x^2 + y^2 + z = 0$$

$$a < b < 0$$

$$x^2 + y^2 + z = 12\sqrt{2} + 10$$

① - ۴

$$S = -4 \Rightarrow a + b = -4 \Rightarrow b = -a - 4 \quad x^2 + 2(-a-4)^2 = 12\sqrt{2} + 10$$

$$\Delta = \frac{2^2}{4} + 2(-4)^2 + 2(-4)\sqrt{2} = 12\sqrt{2} + 10$$

$$x^2 + 2x^2 + 16x + 32 = 12\sqrt{2} + 10$$

$$x = \frac{-2 \pm \sqrt{12\sqrt{2} + 10}}{1}$$

$$\leftarrow \Delta x^2 + 16x - 12\sqrt{2}$$

$$x < 0$$

$$\sqrt{12\sqrt{2} + 10} = \sqrt{(2\sqrt{2} + 4)^2} = 2\sqrt{2} + 4$$

$$x = \frac{-2 - \sqrt{12\sqrt{2} + 10}}{1} = \frac{-2 - 2\sqrt{2} - 4}{1} = -2 - 2\sqrt{2}$$

$$a + b = -4 \quad -2 - 2\sqrt{2} + b = -4 \quad b = -2 + 2\sqrt{2}$$

$$a = ab = (-2 - 2\sqrt{2})(-2 + 2\sqrt{2}) = 9 - 1 = 8$$

$$z^2 - vz - d = 0 \Rightarrow z^2 - vz - d = 0$$

-A

$$t = \frac{V \pm \sqrt{4A}}{2} \Rightarrow z^2 = \frac{V \pm \sqrt{4A}}{2} \quad z = \begin{cases} +\sqrt{\frac{V \pm \sqrt{4A}}{2}} \\ -\sqrt{\frac{V \pm \sqrt{4A}}{2}} \end{cases} \Rightarrow S = 0$$

$$P = \sqrt{\frac{V \pm \sqrt{4A}}{2}} \cdot -\sqrt{\frac{V \pm \sqrt{4A}}{2}} = -\sqrt{\frac{(V \pm \sqrt{4A})^2}{4}} = \frac{-V \pm \sqrt{4A}}{2}$$

$$P^2 = \left(\frac{-V \pm \sqrt{4A}}{2} \right)^2 = \frac{V^2 \pm 2V\sqrt{4A} + 4A}{4} = \frac{11A \pm 12\sqrt{4A}}{4} = \frac{29 \pm 6\sqrt{4A}}{2}$$

$$\textcircled{1} \quad a_1 z^2 + a_2 z - b = 0 \quad a_1 z^2 + a_2 z - b = 0$$

$$\textcircled{2} \quad a_1 z^2 - a_2 z + b = 0$$

-B

$$S \textcircled{1} = \frac{-a_2}{a_1} = -\frac{1}{2} = \alpha + \beta$$

$$S \textcircled{2} = \alpha + \beta + 1 = \frac{a_2}{a_1} \Rightarrow \alpha = 1$$

$$P \textcircled{1} = \frac{-b}{a_1} = -\frac{b}{a} = \alpha\beta \Rightarrow \alpha\beta = -\frac{b}{a}$$

$$P \textcircled{2} = (\alpha + \frac{1}{\alpha})(\beta + \frac{1}{\beta}) = \alpha\beta + \frac{1}{\alpha}(\alpha + \beta) + \frac{1}{\beta} = -\frac{b}{a} + \frac{1}{\alpha} + \frac{1}{\beta} = -\frac{b}{a}$$

$$\left[\frac{-b/a}{1} \right] = \left[\frac{-b/a}{1} \right] = -\frac{b}{a}$$

$$P_2 = \frac{b}{a} = -\frac{b}{a} \Rightarrow b = -4$$

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

$$a_1 z^2 + a_2 z - b = 0 \quad a_1 z^2 - a_2 z + b = 0$$

-C

$$a_1 (z^2 - z + z^2 - z) = 1V$$

$$\alpha + \beta = \frac{a_2}{a_1} = 1 \Rightarrow \beta - 1 = -\alpha$$

$$\frac{B^2 - B + B^2 - \alpha^2}{2} = \frac{1V}{2}$$

$$\text{افضل طريقه} = \frac{\sqrt{\Delta}}{a} = \frac{\sqrt{a^2 + 4ab}}{a} = \sqrt{\frac{a^2 + 4ab}{a^2}} = \sqrt{1 + \frac{4b}{a}}$$

$$B(B-1) + \frac{1}{2} = \frac{1V}{2}$$

$$\sqrt{1 + \frac{4b}{a}} = \sqrt{\frac{1}{0}} = 1 - \frac{1}{0}$$

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

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

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

$$z^2 - (a+1)z + a = 0 \quad z, z+1$$

$$z^2 - (a+1)z + b = 0 \quad y, y+1$$

-D

$$z^2 + z = a+1 \quad z^2 + 1 = a$$

$$z^2 - 1 = z + b$$

$$z^2 + z = 1 \quad z^2 = 1 \quad y = 1 \quad y = 1$$

$$z(z+1) = a \quad z^2 + z^2 = a$$

$$y = (1), y+1 = (2)$$

$$z^2 + z^2 = z^2 + 1 \quad z^2 = 1 \quad z = \pm 1$$

$$z^2 = 1 \quad z^2 = 1$$

$$z = (1), z+1 = (2) \Rightarrow a = 2$$

$$z^2 = 1$$

$$z^2 = 1 \quad z^2 = 1$$

$$x^2 + 2x - 1 - m^2 = 0$$

$$S = \alpha + \beta = 1$$

$$P = \alpha \beta = -(1+m^2)$$

$$\min \alpha^2 + \beta^2 = S^2 - 2P$$

$$1 - 2P$$

$$1 - 2(-(1+m^2)) = 1 + 2 + 2m^2 = 3 + 2m^2$$

$$\underbrace{2m^2 + 3}_{\text{مقدار مثبت}} \xrightarrow{\text{کمترین مقدار}} m=0 \Rightarrow 3$$

$$m=0 \Rightarrow x_1 = -1, x_2 = 1$$



$$\begin{vmatrix} -1 & 1 \\ 1 & 1 \end{vmatrix} \rightarrow AB \text{ دایره} = \frac{x_1 - x_2}{2} = -1$$

$$\left[\frac{1}{2} \right] - 1$$

$$y = ax^2 + bx + c \Rightarrow 1 = a - b + c$$

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

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

$$c - a = 1$$

$$\Rightarrow c = a + 1$$

$$y = ax^2 + 2ax + a + 1$$

$$\alpha^2 + \beta^2 = 0 \Rightarrow S^2 - 2P = 0 \Rightarrow 1 - \frac{2(a+1)}{a} = 0$$

$$y = -\frac{1}{2}x^2 - \frac{1}{2}x + \left(\frac{1}{2}\right) \rightarrow \text{گراف زیاده}$$

$$-\frac{2(a+1)}{a} = 1$$

$$2a + 2 = -a$$

$$3a = -2$$

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