

نام و نام خانوادگی: شماره ۲۲ کلاس دهم (روز پنجشنبه) پاسخنامه تشریحی تکلیف

$$\alpha \times \beta = 2 \quad / \quad \alpha + \beta = 5 \rightarrow \alpha = 5 - \beta \rightarrow \frac{\alpha}{\beta} = \frac{5 - \beta}{\beta} \quad / \quad x^2 = -2 + 5x \rightarrow \beta^2 = -2 + 5\beta$$

$$\frac{\alpha + \beta}{\alpha \beta^2} \rightarrow \frac{\alpha + (5 - \alpha)}{(5 - \alpha)\beta} = \frac{5}{5\beta - \alpha\beta} = \frac{5}{5\beta - 2\beta} = \frac{5}{3\beta}$$

$$\frac{5}{3\beta} = \frac{1}{5} \rightarrow 5 \times 5 = 3\beta \rightarrow \beta = \frac{25}{3}$$

$$\alpha = 5 - \beta = 5 - \frac{25}{3} = \frac{15 - 25}{3} = \frac{-10}{3}$$

$$\frac{\alpha}{\beta} = \frac{-10/3}{25/3} = \frac{-10}{25} = \frac{-2}{5}$$

$$x \rightarrow \frac{x + (-1/5)}{1} = -1/5 \quad / \quad -\frac{b}{2a} = -1/5 \rightarrow -\frac{b}{1} = \frac{-1}{5} \rightarrow b = \frac{1}{5}$$

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

$$(x^2 - 1)^2 = 0 \rightarrow x^2 - 1 = 0 \rightarrow x^2 = 1 \rightarrow x = \pm 1$$

$$\begin{bmatrix} a \\ b \end{bmatrix} = \begin{bmatrix} 1 \\ 1 \end{bmatrix} \rightarrow \begin{bmatrix} 1 \\ 1 \end{bmatrix}$$

$$A = \begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix} \quad / \quad B = \begin{bmatrix} 1 & 1 \\ 1 & 1 \end{bmatrix} \rightarrow \lambda = \frac{-1 \pm \sqrt{1 - 4}}{2} = \frac{-1 \pm \sqrt{-3}}{2} = \frac{-1 \pm i\sqrt{3}}{2}$$

$$\alpha + \beta = -1 \quad / \quad \alpha\beta = \frac{1}{4}$$

$$y = a(x - \alpha)(x - \beta)$$

$$1 = a(-1 - \alpha)(-1 - \beta) \rightarrow 1 + (\alpha + \beta) + \alpha\beta = 1 - 1 + \frac{1}{4} = \frac{1}{4} \rightarrow a = \frac{1}{4}$$

$$y = \frac{1}{4}(x + 1)(x + 1) = \frac{1}{4}(x + 1)^2$$

$$-x^2 + 2x + m = 0 \quad / \quad x(1) \rightarrow x^2 - 2x - m = 0 \rightarrow \Delta = 4 + 4m \geq 0 \rightarrow m \geq -1$$

$$\frac{2 \pm \sqrt{4 + 4m}}{2} = 1 \pm \sqrt{1 + m}$$

$$-1 \leq m < -\frac{9}{4} \rightarrow -2, -1, -\frac{5}{4}, -\frac{3}{2}, -\frac{7}{4}, -2$$

$$y = mx^2 = 12x + 8m - 1 \rightarrow \boxed{m = \frac{y+1}{8}} \quad / \quad y = m \left(\frac{y+1}{8} \right)^2 + 8m - 1$$

$$\left(\frac{y+1}{8} \right)^2 - \frac{y}{8} - y = m \left(\frac{y+1}{8} \right)^2 - \frac{y}{8} + 8m - 1$$

$$8m^2 - 2m - y = 0 \quad \leftarrow \quad 8m - \frac{y}{m} = 2 \quad \leftarrow \quad y = \frac{-2y + 8m - 1}{m}$$

حل: $m = 2$ ~~$m = \frac{y}{8}$~~

نقطة التقاطع: $x = \frac{y}{m} = 0 \rightarrow x = \frac{y}{m} \rightarrow \frac{y}{2} = 0 \rightarrow \boxed{m = 2}$

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

$$\alpha + \beta = -2(a+1) \quad | \quad \alpha\beta = 2a-1 \quad \rightarrow \quad \alpha^2 = \alpha \times \beta \rightarrow \alpha^2 = 2a-1 \rightarrow \alpha^2 - 2a + 1 = 0 \rightarrow (a-1)^2 = 0$$

$$\alpha \times \beta = 2a-1 \quad \rightarrow \quad \boxed{a=1}$$

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$$x^2 - \sqrt{2}x - 8 = 0 \quad / \quad 2p^2 - 2p + 5 = 0 \rightarrow \boxed{x^2 = 2} \rightarrow z^2 - \sqrt{2}z - 8 = 0 \rightarrow z = \frac{\sqrt{2} \pm \sqrt{49}}{2}$$

$$S = 0 \quad / \quad p = \frac{-\sqrt{2} \pm \sqrt{49}}{2} \rightarrow 2 \left(\frac{-\sqrt{2} \pm \sqrt{49}}{2} \right)^2 \rightarrow \frac{(\sqrt{2} \pm \sqrt{49})^2}{2}$$

$$\frac{(\sqrt{2} \pm \sqrt{49})^2}{2} \rightarrow \frac{29 \pm \sqrt{49}}{2}$$

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$$y = kx^2 = 8x - 4 \quad / \quad y = -8x - 2$$

$$x = \frac{-b}{2a} = \frac{-8}{-2k} = \left(\frac{4}{k} \right) \rightarrow y = k \left(\frac{4}{k} \right)^2 - 2 \times \frac{4}{k} - 4 \rightarrow y = \frac{16}{k} - 4$$

$$\frac{-8}{k} - 4 = -8 \left(\frac{4}{k} \right) - 2 \rightarrow \frac{-8}{k} - 4 = -\frac{32}{k} - 2 \rightarrow \boxed{k=2} \rightarrow y = \frac{16}{2} - 4 = 4$$

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$$-mn^2 + mn + 1 + (m+1)n = 0 \rightarrow -mn^2 + (m+m+1)n + 1 = 0$$

$$-mn^2 + (2m+1)n + 1 = 0 \rightarrow \frac{x(-1)}{m} \rightarrow mn^2 - (2m+1)n - 1 = 0$$

$$\Delta C_1 \rightarrow f_m^2 + 4m + 1 = \Delta \rightarrow f_m^2 + 4m + 1 < 0 \rightarrow \frac{m^2 + 4m + 1}{(m+1)^2} < \frac{1}{2}$$

$$\frac{\sqrt{2}}{2} < m+1 < \frac{\sqrt{2}}{2} \rightarrow \boxed{m+1 = \frac{\sqrt{2}}{2}}$$

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