نام و نام خانوادگی: فاطمه زهرا عیال زاده کلاس: دوم دختر A تکلیف شماره: ۲۲

۱۸,۷۵

۱)

$x^2 - 5x + 2 = 0$ $\alpha\beta = 2$ ، $\beta + \alpha = 5$

$\beta^2 - 5\beta + 2 = 0$

ج ✓

$$\frac{4\alpha + \beta^5}{5\beta^2} = \frac{\alpha^{10}\beta^2 + \beta^5}{(\alpha+\beta)\beta^2} = \frac{\alpha^8 + \beta^4}{\alpha+\beta} = \frac{(\alpha+\beta)(\alpha^2 - \alpha\beta + \beta^2)}{(\alpha+\beta)}$$

$$= \alpha^2 + \beta^2 - \alpha\beta = (\alpha+\beta)^2 - 3\alpha\beta = 25 - 6 = 19$$

۲)

$$\begin{vmatrix} 3 & 2 \\ -4 & \end{vmatrix} \quad , \quad \begin{vmatrix} -\frac{3}{2} & \\ -4 & \end{vmatrix}$$

$$\frac{3 + 1/5}{2} = 2/25 \rightarrow 3 - 2/25 = 0/75 = \frac{3}{4}$$

ج ✓

$$\begin{vmatrix} x = -\frac{b}{2a} = \frac{3}{4} \\ y \end{vmatrix} \Rightarrow \text{مجموع عرض‌های تابع} \rightsquigarrow \frac{-b}{a} = \frac{3}{4} \times 2 = \frac{3}{2}$$

۳)

$$\frac{\sqrt{\Delta}}{|a|} = \frac{4}{3}k \rightarrow \frac{\sqrt{4k^2 - 20}}{1} = \frac{4}{3}k \rightarrow 2\sqrt{k^2 - 5} = \frac{4}{3}k$$

$$k^2 - 5 = \frac{4}{9}k^2 \rightarrow \frac{5}{9}k^2 = 5 \rightarrow k^2 = 9 \rightsquigarrow \left[\frac{k^2}{2}\right] = 4$$

ج ✓

Sanaz

(٤

$\frac{-b}{2a} = \frac{-\Delta}{2} = 2 \rightarrow -\Delta = -1 \rightsquigarrow \frac{-b}{2a} = -1$

$\Rightarrow \boxed{b = 2a}$

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

$\alpha\beta = \frac{c}{a} = \frac{-1}{2} \rightsquigarrow -a = 2c$ ✓

$\left.\begin{matrix} x=-1 \\ y=1 \end{matrix}\right\} \rightsquigarrow a - b + c = 1 \rightarrow c - a = 1 \rightarrow 2c = 1 \rightarrow \boxed{c = \frac{1}{2}}$

(٥

$-x^2 + 5x + m = 0$ ① $\rightarrow \Delta > 0 \rightarrow 25 + 4m > 0 \rightsquigarrow m > -6.25$

② $\rightarrow \frac{-11}{2} + \frac{5}{2} + m < 0 \rightarrow 2.5 + m < 0 \rightarrow m < -2.5$

③ $\rightarrow \frac{-b}{2a} < \frac{9}{2} \rightsquigarrow \frac{-b}{2a} = 2.5$

$-6.25 < m < -2.5 \rightarrow \{-6, -5, -4, -3\}$

۴ متغیر

✓

(۶

$\frac{-\Delta}{4a} = 2 \rightarrow \frac{-[144 - 4m(5m-1)]}{4m} = 2$

$20m^2 - 12m - 144 = 0 \rightarrow 5m^2 - 3m - 36 = 0$

Senobar

$\Delta = 9 + 720 = 729 \rightarrow \frac{3 \pm 27}{10} = $ ۳ ق ق ، $-2/4$ غ ق ق $\rightarrow x > 0$

$x = \frac{-b}{2a} = \frac{12}{4} = 3$ (۲) ✓

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۷) $\alpha, a, \beta \rightarrow a = \sqrt{\alpha\beta} = \sqrt{2a-1}$ شرط وجود ریشه برای $a=1$ را بررسی کن.

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

$\xrightarrow{a=1} x^2 + 4x + 1 = 0 \longrightarrow \Delta > 0$ ✓ (۱/۵)

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۸) $x^4 - 7x^2 - 5 = 0 \xrightarrow{x^2 = t} t^2 - 7t - 5 = 0$

$t = \frac{7 \pm \sqrt{69}}{2} = x^2 \rightarrow x^2 = \frac{7 + \sqrt{69}}{2} \rightarrow x = \pm\sqrt{\frac{7 + \sqrt{69}}{2}}$

(+ : ق ق ، − : غ ق ق)

$S = 0 \quad P = \frac{7 + \sqrt{69}}{-2} \rightarrow 2P^2 - 3SP + 2S = 2P^2 = 59 + 7\sqrt{69}$

(۲) ✓

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۹) $\frac{-b}{2a} = \frac{2}{k}$, $\frac{4}{k} - \frac{8}{k} - 4$

$-4 \times \frac{2}{k} - 4 = \frac{-8}{k} - 4$

$\frac{-8}{k} - 4 = \frac{-4}{k} - 6$

(۱/۲۵)

$\frac{+4}{k} = -2 \rightarrow \boxed{k = -2}$

$\frac{-4}{k} - 6 = -4 - 8$

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$-mx^2 + mx + 1 = -m - x$ ((۱۰

$\Delta < 0 \rightarrow (m+1)^2 - 4m(-m-1) < 0$

$m^2 + 2m + 1 + 4m^2 + 4m = 5m^2 + 4m + 1 < 0$

$\Delta = 16 - 20 = -4 \rightarrow \frac{-4 \pm 2i}{10} \rightarrow -1$

$= \frac{1}{5}$

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

$+ \quad - \quad +$

$\rightsquigarrow \left(-1, \frac{-1}{5}\right)$

۵ ✓