نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۲۳ ..... کلاس دهم ریاضی .....

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$y = a(x-h)^2 + k$ عرض از مبدا

$-1x - h = 0$

$h = -1$

$y = a(x+1)^2 + 9 \xrightarrow{(4,1)} 1 = a(5)^2 + 9 = 25a + 9$

$25a = -8$

$a = -\frac{8}{25}$

$y = -\frac{1}{2}(x+1)^2 + 9$

۲

دو ریشه $\longrightarrow \Delta > 0 \longrightarrow b^2 - 4ac > 0 \longrightarrow m^2 - 4(2)(m+6) > 0$

$m^2 - 8m - 48 > 0 \longrightarrow (m-12)(m+4) > 0$

$-4 \quad 12$

$+ \quad 0 \quad - \quad 0 \quad +$

$-4 < m < 12$ ①

دو ریشه مثبت $\longrightarrow P > 0 \longrightarrow \frac{c}{a} > 0$

$\frac{m+6}{2} > 0 \longrightarrow m > -6$ ②

① ∩ ② $\longrightarrow -4 < m < 12$

۳

$\Delta > 0$

$(2m-1)^2 - 4(3)(2-m) > 0$

$4m^2 + 8m - 11 > 0$

$\Delta = 64 - 4(4)(-11) = 240$

$m = \frac{-8 \pm \sqrt{240}}{8}$ غیر قابل قبول

$S = \frac{1}{b} \longrightarrow \frac{-b}{a} = \frac{a}{c}$

$\frac{1-2m}{3} = \frac{3}{2-m}$

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

$\Delta = 25 - 4(2)(-7) = 81$

$m = \frac{5 \pm 9}{4}$ ← $m = -1$ ✓ ، $m = \frac{7}{2}$ ✗

۴

$x^2 - x - 6 = 0$

$S = 1, P = -6$

$x_1^3 = x_2^3 + \frac{1}{x_1} + \frac{1}{x_2}$

$(x_1 + x_2)^3 - 3(x_1 x_2)(x_1 + x_2) + \frac{1}{x_1} \cdot \frac{1}{x_2}$

$= 1 - 3(-6)(1) - \frac{1}{6} = \frac{35}{6}$

$(x_1^3 + \frac{1}{x_1})(x_2^3 + \frac{1}{x_2})$

$(x_1 x_2)^3 + (x_1 x_2)(x_1^2 + x_2^2)$

$(-6)^3 + (-6)(1 - 2(-6)) + (\frac{-1}{6}) = \frac{-85}{6}$

$\longrightarrow t^2 - \frac{35}{6}t - \frac{85}{6} = 0$

۵

$(\sqrt[3]{x} + \frac{1}{\sqrt[3]{x}})^2 (\sqrt[3]{x} + 1)(\sqrt[3]{x} - 1) = 2\sqrt[3]{x}$

$x - \sqrt[3]{x^2} + 2\sqrt[3]{x^2} - 2\sqrt[3]{x} + \sqrt[3]{x} - 1 = 2\sqrt[3]{x}$

$\sqrt[3]{x^2} - 3\sqrt[3]{x} + x - 1 = 0 \longrightarrow S = \frac{-b}{a} = 3$ ③

$x_1 = 3x_2$ $x^2 - Sx + \frac{4}{3} = 0$ $x^2 - \frac{a}{3}x + \frac{4}{3} = 0$ $\begin{cases} S = \frac{a}{3} \\ P = \frac{4}{3} \end{cases}$ $\Delta = 0$ $\frac{a^2}{9} - 4(1)(\frac{4}{3}) = \frac{a^2}{9} - \frac{48}{9} = 0$ $a^2 - 48 = 0$ $a^2 = 48 \rightarrow a = \pm 4\sqrt{3}$	۶
$\begin{cases} a < 0 \ (I) \\ P \geq 0 \ ✓ \\ S > 0 \rightarrow \frac{-3-2a}{1} > 0 \rightarrow -3 > 2a \end{cases}$ $\frac{-3}{2} > a \ (II)$ $I \cap II$ $a < \frac{-3}{2}$	۷
$\frac{-a}{2} = \frac{2}{-2} \rightarrow 2a = 4$, $a = 2$ $\longrightarrow ab = 2 \times 0 = (0)$ $\xrightarrow{y=1} \frac{-\Delta}{4a} = 1 \rightarrow \frac{4 - 4(-1)(b)}{4} = \frac{4+4b}{4} = 1$ $4 + 4b = 4$ $4b = 0 \rightarrow b = 0$	۸
$x_1 = \frac{1}{2} + x_3$ $x_2 = \frac{1}{2} + x_4$ $S_1 = \frac{a}{2}$, $P_1 = \frac{b}{2}$ | $S_2 = \frac{-a}{2}$, $P_2 = -3$ $x_1x_2 = \frac{1}{4} + \frac{1}{2}(x_3 + x_4) + x_3x_4$ ($\frac{b}{2}$, $\frac{-a}{2}$, -3) $4b = -22 - 2a \longrightarrow a + 2b = -11$ $x_1 + x_2 = 1 + x_3 + x_4$ ($\frac{a}{2}$, $\frac{-a}{2}$) $a = 1$ $\longrightarrow 1 + 2b = -11$, $2b = -12$, $b = -6$ $[\frac{ab}{4}] = [\frac{-6}{4}] = (-2)$	۹
$\begin{cases} r^2 + 6r + m = 0 \\ r^2 + 2r - 3m = 0 \end{cases}$ $4r + 4m = 0$ $m = -r$ $r^2 + 6r - r = r^2 + 5r = 0$ $r(r+5) = 0$, $r = 0$, $r = -5$ $m = 5$ $x^2 + 6x + 5 = 0$ $(x+1)(x+5) = 0$ → $x = (-1)$ غیر مشترک، $x = -5$ $x^2 + 2x - 15 = 0$ $(x+5)(x-3)$ → $x = (3)$ غیر مشترک، $x = -5$ فاصله $= \|-1-3\| = (4)$	۱۰