نام و نام خانوادگی: ... ریاضی (۱) ... تکلیف ... ۱۴۰۱

۱۷/۲۵

(۱) $\frac{-\Delta}{4a} = 7 \rightarrow b^2 - 4(-1)(3) = 28 \rightarrow b^2 = 28 - 12 = 16 \rightarrow \boxed{b = \pm 4}$

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(۲) الف) → ریشه ندارد

ب) $x^4 - 2x^2 - 15 = 0$

$(x^2-5)(x^2+3) = 0 \begin{cases} x^2 = 5 \rightarrow \pm\sqrt{5} \\ x^2 = -3 \; \times \end{cases}$

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(۳) $x_1 = \alpha \quad x_2 = \alpha + 2 \Rightarrow \alpha + \alpha + 2 = \frac{16}{4} \rightarrow 2\alpha = 2 \rightarrow \alpha = 1$

$x_1 = 1 \quad x_2 = 3 \quad 3 = \frac{m}{4} \rightarrow m = 12$

$4x^2 - 16x + 12 = 0$ ✓

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(۴) $\alpha + \beta = 2 \rightarrow \beta = 2 - \alpha \rightarrow 2\alpha - 2 + \alpha = 4 \rightarrow 3\alpha = 6 \rightarrow \alpha = 2, \beta = 0$

$\frac{m-1}{3} = 0 \rightarrow m - 1 = 0 \rightarrow \boxed{m = 1}$ $3x^2 - 6x = 0$ ✓

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(۵) $\alpha\beta = 1 \qquad \frac{m^2 - 2}{m} = 1 \rightarrow 2 - m^2 = m \rightarrow m^2 - m - 2 = 0$

$m = 2 \rightarrow -2x^2 + 4x + 2 = 0 \longleftarrow (m-2)(m+1) = 0$

$\boxed{m = 2}$ ق ق

$m = -1 \rightarrow x^2 + 4x - 1 = 0$ غ ق $\rightarrow \Delta = 0$ یک ریشه مضاعف

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(۶) $\alpha\beta = 3 \rightarrow \alpha\beta^2 = 4 \rightarrow 3\beta = 4 \rightarrow \boxed{\beta = \frac{4}{3}} \boxed{\alpha = \frac{9}{4}}$

$m = \frac{1}{4} + \frac{4}{3} = \frac{4+16}{12} = \frac{20}{12} \rightarrow \boxed{m = \frac{20}{12}}$ $\frac{42}{12}x^2 - \frac{43x}{12} + 3 = 0$ ✓

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(۷) $x_1 = \alpha \quad x_2 = 3\alpha \quad S = 4\alpha = 4 \rightarrow \boxed{\alpha = 1} \boxed{\beta = 3}$

$x^2 - 4x + 3 = 0$ ✓

$P = \boxed{m = 3}$

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(۸) $\alpha\beta = 2 \rightarrow \beta = \frac{2}{\alpha} \Rightarrow \alpha^3 + \frac{8}{\alpha^3} = \alpha^3 + \beta^3 = S^3 - 3SP$ $\boxed{S = 7}$ $\boxed{P = 2}$

$343 - 3(7)(2) = \boxed{301}$

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(۹)

$$y_{max} = \frac{-(25 - 4(-1)(0))}{-4} = \frac{25}{4} = 6{,}25$$

$$t^2 - 5t = 0 \rightarrow t(t-5) = 0 \rightarrow \begin{cases} t = 0 \ \times \\ t = 5 \ \checkmark \end{cases}$$

شروع ضربه

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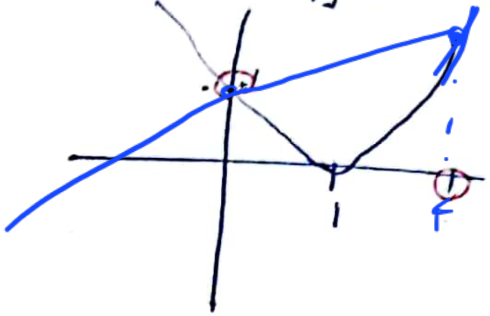
(۱۰)

الف) $x^2 - 2x + 1 = 2x + 1$

$$\frac{-b}{2a} = \frac{2}{2} = 1 \qquad y_{Max} = 0$$

یک نقطه برخورد $\begin{bmatrix} 0 \\ 1 \end{bmatrix}$

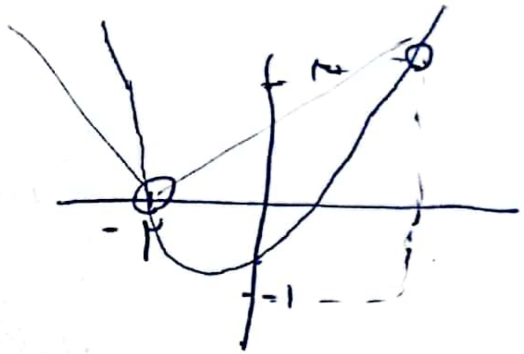


$x = 0, 4$

ب) $x^2 - 2x = |x+2|$

$$a_s = \frac{-b}{2a} = \frac{-2}{2} = -1 \qquad y_s = -1$$

۲ نقطه برخورد $\begin{bmatrix} 3 \\ \ldots \end{bmatrix}$ و $\begin{bmatrix} -2 \\ 0 \end{bmatrix}$



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