سارینا اسپانی – یازدهم دختر c – شماره تکلیف (۱۴) ۱۰

(۱)

$y = -x^2 + bx + 3$

$\frac{-\Delta}{4a} = max$

$\frac{-(b^2 - 4ac)}{4a} = \frac{-(b^2 - 4(3)(-1))}{-4} = \frac{-b^2 - 12}{-4} = 7$

$-b^2 - 12 = -28$

$16 = b^2 \rightarrow \boxed{b = \pm 4}$

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(۲)

$f(x) = x^4 + 2x^2 + 3$

$x^2 = t \qquad t^2 + 2t + 3 = 0$

$\Delta = 4 - 4(3) < 0 \rightarrow$ ریشه ندارد

$f(x) = (4 - x^2)^2 - 2(4 - x^2) - 15$

$4 - x^2 = t$

$t^2 - 2t - 15 = 0$

$(t - 5)(t + 3) = 0$

$t = 5 \qquad t = -3$

$4 - x^2 = 5$

$-1 = x^2 \rightarrow$ غ ق ق

$4 - x^2 = -3$

$7 = x^2 \rightarrow \boxed{x = \pm\sqrt{7}}$

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(۳)

$x_1 = a \qquad x_2 = a + 2 \qquad S = \frac{-b}{a}$

$S = \frac{16}{4} = 4 = 2a + 2$

$2 = 2a \rightarrow \boxed{a = 1} \rightarrow$ ریشه‌ها : ۱و۳

$\frac{m}{4} = 1 \times 3 \rightarrow \boxed{m = 12}$

۴) $3x^2 - 9x + m - 1 = 0$ $\quad S = \frac{-b}{a}$ $\quad 2\alpha - \beta = 4$

$S = \frac{9}{3} = 3 = \alpha + 2\alpha - 4 \qquad 2\alpha - 4 = \beta$

$3 = 3\alpha - 4$

$9 = 3\alpha \longrightarrow \boxed{\alpha = 3}$ ریشه‌ها ۰ و ۳

ضرب ریشه‌ها $\longrightarrow P = \frac{c}{a} \longrightarrow \frac{m-1}{3} = 3 \times 0 = 0$

$m - 1 = 0 \longrightarrow \boxed{m = 1}$

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۵) $-mx^2 + 4x + m^2 - 3 = 0 \qquad x_1 = \alpha \;,\; x_2 = \frac{1}{\alpha}$

$\frac{1}{\alpha} \times \alpha = 1$ ① $\qquad \frac{m^2 - 3}{-m} = 1$

$m^2 + m - 3 = 0$

$(m+3)(m-1) = 0$

$\boxed{m = -3}$ ، $\boxed{m = 1}$

if $m = 1 \longrightarrow -x^2 + 4x + 1 - 3 = -x^2 + 4x - 1 = 0$

$\Delta = 16 - 4(-1)(-1) = 12$ قق

if $m = -3 \longrightarrow +3x^2 + 4x + 4 - 3 = 3x^2 + 4x + 1$

$\Delta = 16 - 4(3)(1) = 0$

یک ریشه دارد در این حالت و غ‌قق است $\longleftarrow$ پس $\boxed{m = 1}$

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۶) $x^2 - mx + 3 = 0 \qquad a\beta^2 = 4 \longrightarrow a = \frac{4}{\beta^2}$

$a \times \beta = 3 \longrightarrow \frac{4}{\beta^2} \times \beta = \frac{4}{\beta} = 3 \longrightarrow \boxed{\beta = \frac{4}{3}} \longrightarrow a = \frac{4}{\frac{16}{9}} = \frac{9}{4}$

$S = \frac{9 \times 3}{4} + \frac{4 \times 4}{3} = \frac{27 + 16}{12} = \boxed{\frac{43}{12} = +m}$

$r^2 - 4r + m = 0$ $\quad r_1 = a$, $r_2 = 2a$ (V)

$8 - 4 = 3a + a = 4a \rightarrow \boxed{a = 1}$ $\rightarrow$ لون $= 1 g 3$

$P = 1 \times 3 = \boxed{3 = m}$