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

ب) $x^2 = t \rightarrow t^2+2t+3 = 5t$

۲) ب) $(4-u^2) = t \rightarrow f(u) = t^2-2t-15 \rightarrow (t-5)(t+3) = 0 \rightarrow t = 5 \; , \; t = -3$

$4-u^2 = 5 \rightarrow -u^2 = 1 \rightarrow u^2 = -1$ ق ق ع

$4-u^2 = -3 \rightarrow -u^2 = -7 \quad u^2 = 7 \rightarrow u = \pm\sqrt{7}$

۳) $\alpha \; , \; \beta = \alpha+2$

$S = \alpha+\beta = 4 \rightarrow 2\alpha+2 = 4 \rightarrow 2\alpha = 2 \rightarrow \alpha = 1 \rightarrow \boxed{\alpha = 1 \quad \beta = 3}$

$P = \frac{m}{4} = 3 \rightarrow m = 12$

۴) $2\alpha-\beta = 4$

$S = \alpha+\beta = 2 \quad \frac{2\alpha+\beta = 4}{3\alpha = 6} \rightarrow \boxed{\alpha = 2} \; \boxed{\beta = 0}$

$P = \frac{m-1}{3} = 0 \rightarrow \boxed{m = 1}$

$3u^2-14u+1 = 0 \rightarrow \Delta > 0$

۵) $-mu^2+4u+m^2-2 = 0$

$\frac{c}{a} = 1 \quad \frac{m^2-2}{-m} = 1 \rightarrow m^2-2 = -m \rightarrow m^2+m-2 \rightarrow (m+2)(m-1) \rightarrow m = -2$ ق ق ع $\boxed{m = 1}$ $\Delta > 0$.

$u^2-mu+3 = 0 \rightarrow P = 3$

$\alpha\beta^2 = 4 \rightarrow \underbrace{\alpha\beta\beta}_{P} = 4 \rightarrow \beta = \frac{4}{3} \; , \; \alpha = \frac{9}{4} \quad S = \alpha+\beta = \frac{4}{3}+\frac{9}{4} \; , \; \frac{16+27}{12} = \boxed{\frac{43}{12}}$

۶)

$u^2-4u+m = 0$

$\alpha = \alpha \; , \; \beta = 3\alpha \rightarrow \alpha+\beta = 4 \rightarrow \alpha+3\alpha = 4 \rightarrow \alpha = 1 \; , \; \beta = 3$

۷) $\frac{m}{1} = 3 \rightarrow \boxed{m = 3}$ $t^2-(u+3)t+3 = 0$ $\Delta > 0$.

شهزاد شوشتری ١٤

$x^2 - 7x + 10 \to P = 10 \quad S = 7$

۸) $a^3 + \frac{8}{a^3} = (a + \frac{2}{a})(a^2 + \frac{4}{a^2} - 2) = 43 \times 7 = 301$

$\frac{a^2+2}{a} = \frac{7a}{a} = 7$

$(a + \frac{2}{a})^2 - 6 = 49 - 6 = 43$

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۹) $h(t) = -10t^2 + 50t \to \frac{-b}{2a} = \frac{-50}{-20} = 2.5$

$-10 \times (\frac{25}{4}) + 50(\frac{5}{2}) = \frac{125}{2} \to -10t^2 + 50t = 0 \quad t(-10t + 50) = 0 \quad t = 5s$

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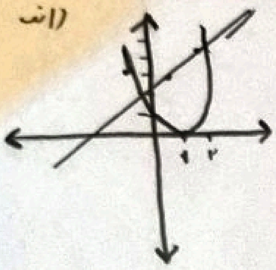
۱۰) الف)



$(x-1)^2 = 2x+1 \quad x^2 + 1 - 2x = 2x + 1 \to x^2 - 4x = 0 \quad x(x-4) = 0$

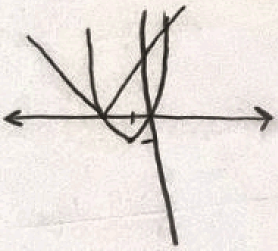
$x = 0$ و $x = 4$

۲ جواب

ب) $x^2 + 2x = |x+2|$

$\frac{-b}{2a} = \frac{-2}{2} = -1$

$1-2 = -1$



$x^2 + 2x = |x+2| =$

۲ جواب ① $x^2 + 2x = x + 2 \to x^2 + x - 2 = 0 \quad (x+2)(x-1) = 0$

$x = -2 \quad x = 1$

② $x^2 + 2x = -x - 2 \to x^2 + 3x + 2 = 0 \quad (x+1)(x+2) = 0$

$x = -1 \quad x = -2$

غلط