نام و نام خانوادگی ......شیرین اسدی.................. پاسخنامه تشریحی تکلیف شماره ..(۱۴).. کلاس ..یازدهم تجربی..(B)......

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رأس سهمی : $(x, 7) \rightarrow 7 = \frac{-\Delta}{4a}$ $\quad \Delta = (b)^2 - 4(3)(-1) = b^2 + 12$

$\rightarrow \frac{-\Delta}{4a} = \frac{-(b^2+12)}{-4} = \frac{b^2+12}{4} = 7 \rightarrow b^2 + 12 = 28 \rightarrow b^2 - 16 = 0 = (b-4)(b+4)$

$\Rightarrow b = \pm 4$

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الف) $f(x) = x^4 + 2x^2 + 3 = 0 \rightarrow x^2 = t \rightarrow t^2 + 2t + 3 = 0 \quad \Delta = 4 - 4(3) \Rightarrow \Delta < 0$

ریشه ندارد و تابع صفر ندارد.

ب) $f(x) = (4 - x^2)^2 - 2(4 - x^2) - 15 = 0 \rightarrow (4 - x^2) = t \rightarrow t^2 - 2t - 15 = (t-5)(t+3) = 0$

$\rightarrow t = 5 \Rightarrow 4 - x^2 = 5 \rightarrow x^2 + 1 = 0$ غ ق ق α (ریشه ندارد)

$\rightarrow t = -3 \Rightarrow 4 - x^2 = -3 \rightarrow x^2 - 7 = 0 \Rightarrow x = \pm\sqrt{7}$

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$\alpha = 4\beta \rightarrow S = \alpha + \beta = 2\beta + 2 = \frac{4(-16)}{4} = 4 \Rightarrow \beta + 1 = 2 \rightarrow \beta = 1 \ , \ \alpha = 4$

$P = \alpha\beta = 4 = \frac{m}{4} \Rightarrow m = 12$

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$2\alpha - \beta = 4 \Rightarrow 4\alpha - 2\beta = 8 = 3\alpha - 3\beta + \alpha + \beta = 3(\alpha - \beta) + (\alpha + \beta) = 8$

$\alpha + \beta = S = \frac{6}{3} = 2 \Rightarrow 3(\alpha - \beta) = 8 - 2 = 6 \Rightarrow \alpha - \beta = 2$

$\alpha - \beta = \frac{\sqrt{\Delta}}{|a|} \rightarrow \Delta = (6)^2 - 4(3)(m-1) = 36 + 12 - 12m = 48 - 12m$

$\Rightarrow \frac{\sqrt{48 - 12m}}{3} = 2 \rightarrow 48 - 12m = (6)^2 \rightarrow 12 - 12m = 0 \rightarrow m = 1$ (36)

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$\alpha = \frac{1}{\beta} \rightarrow \alpha\beta = \frac{1}{\beta} \times \beta = 1 = \frac{m^2 - 2}{-m} \Rightarrow m^2 - 2 = -m \rightarrow m^2 + m - 2 = (m+2)(m-1) = 0$

$\Rightarrow m = 1 \ , \ m = -2 \qquad \Delta > 0$ (دو ریشه‌ی متمایز)

$m = 1 \rightarrow -x^2 + 4x - 1 = 0 \quad \Delta = 16 - 4(-1)(-1) = 12$ ✓ $\Rightarrow m = 1$

$m = -2 \rightarrow 2x^2 + 4x + 2 = 0 \quad \Delta = 16 - 4(2)(2) = 0$ α غ ق ق (16)

۶

$\alpha\beta^{2} = (\alpha\beta)(\beta) \to \alpha\beta = P = \frac{3}{1} = 3 \Rightarrow 3\beta = 4 \to \beta = \frac{4}{3}$

$\beta^{2} = \frac{16}{9} \to \alpha = 4 \times \frac{9}{16} = \frac{9}{4} \to \alpha + \beta = \frac{9}{4} + \frac{4}{3} = \frac{27+16}{12} = \frac{43}{12}$

$S = \frac{-(-m)}{1} = m = \frac{43}{12}$

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$\alpha = 3\beta \to S = \alpha + \beta = 3\beta + \beta = 4\beta = 4 \to \beta = 1 \ , \ \alpha = 3$

$P = \alpha\beta = m = 3$

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$\alpha^{2} - 7\alpha + 2 = 0 \overset{\div\alpha}{\Rightarrow} \alpha - 7 + \frac{2}{\alpha} = 0 \Rightarrow \alpha + \frac{2}{\alpha} = 7$

$(\alpha + \frac{2}{\alpha})^{3} = \alpha^{3} + \frac{8}{\alpha^{3}} + 3\alpha(\frac{2}{\alpha})(\alpha + \frac{2}{\alpha}) = \alpha^{3} + \frac{8}{\alpha^{3}} + 6(\alpha + \frac{2}{\alpha}) = 7^{3}$ (with $\alpha + \frac{2}{\alpha}$ crossed out and 7 written over it)

$\Rightarrow \alpha^{3} + \frac{8}{\alpha^{3}} = 7^{3} - 42 = 343 - 42 = 301$

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ارتفاع ماکسیمم ← رأس سهمی ← $\frac{-b}{2a} = \frac{-50}{-20} = \frac{5}{2}$

$\to -10(\frac{5}{2})^{2} + 50(\frac{5}{2}) = -10(\frac{25}{4}) + 25(5) = 25(5 - \frac{10}{4}) = \frac{125}{2} =$ ماکسیمم (h)

زمانی که توپ به زمین برخورد می‌کند $\to h = 0 \Rightarrow -10t^{2} + 50t = 0 = -10t(t - 5) = 0$

$\to t = 0$ (لحظه شروع)

$t = 5$. ق ق

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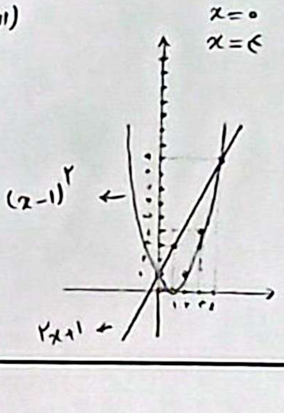
الف)

$x = 0$
$x = 4$



ب)

رأس سهمی: $-\frac{2}{2} = -1$

$(1)^{2} - 2 = -1$

$x = -2$
$x = 1$