نام و نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ...۱۴... کلاس .....

۱

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

$\rightarrow b=\pm 4$

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الف)

$x^2=t \rightarrow t^2+2t+3=0 \rightarrow \Delta<0 \rightarrow$ معادله ریشه ندارد پس تابع صفر ندارد.

ب)

$4-x^2=t \rightarrow t^2-2t-15=0 \rightarrow (t-5)(t+3)=0 \rightarrow \begin{cases} t=5 \rightarrow -x^2-1=0 \ \text{جواب ندارد} \\ t=-3 \rightarrow -x^2+7=0 \rightarrow x=\pm\sqrt{7} \end{cases}$

۳

$4x^2-16x+m=0 \begin{cases} \alpha \\ \beta=\alpha+2 \end{cases} \quad S=\frac{16}{4}=4 \rightarrow 2\alpha+2=4$

$\rightarrow \alpha=1$

$\begin{matrix} \alpha=1 \\ \beta=3 \end{matrix} \Big\} c=3 \rightarrow \frac{m}{4}=3 \rightarrow m=12$

۴

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

$2\alpha-\beta=4 \rightarrow 3\alpha=6 \rightarrow \alpha=2 \rightarrow \beta=0$

$+) \ \alpha+\beta=\frac{6}{3}=2$

$p=0 \xrightarrow{\alpha=0} \frac{m-1}{3}=0 \rightarrow m=1$

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$-mx^2+4x+m^2-2=0 \begin{cases} \alpha=\alpha \\ \beta=\frac{1}{\alpha} \end{cases}$

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

$m=\begin{cases} 1 \rightarrow \Delta>0 \checkmark \rightarrow m=1 \\ -2 \rightarrow \Delta=0 \times \end{cases}$

۶

$x^2 - mx + 3 = 0$

$\alpha\beta^2 = 3 \longrightarrow P\beta = 4 \to \beta = \frac{4}{3} \to \beta\alpha\alpha = 3 \to \frac{4}{3}\alpha\alpha = 3 \to \alpha = \frac{9}{4}$

$\frac{c}{a} = 3$

$\alpha + \beta = m \to m = \frac{4}{3} + \frac{9}{4} = \frac{43}{12}$

۷

$x^2 - 4x + m = 0 \nearrow \alpha = \alpha \quad \searrow \beta = 3\alpha$

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

$\to \alpha = 1, \ \beta = 3 \to P = 3 \to \frac{c}{a} = 3 \to \frac{m}{1} = 3 \to m = 3$

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$x^2 - 7x + 2 = 0 \nearrow \alpha \ \searrow \beta \to \alpha\beta = 2 \to \alpha = \frac{2}{\beta} \to \alpha^3 = \frac{8}{\beta^3}$

$\alpha^3 + \frac{8}{\alpha^3} = \alpha^3 + \frac{8}{\frac{8}{\beta^3}} = \alpha^3 + \beta^3 = S^3 - 3PS = 343 - 42 = 301$

$S = 7$

$P = 2$

۹

$h(t) = -10t^2 + 50t \begin{cases} x_{max} = \frac{-50}{-20} = \frac{5}{2} \\ y_{max} = (-10 \times \frac{25}{4}) + (25 \times 5) = \frac{125}{2} = 62/5\,m \end{cases}$

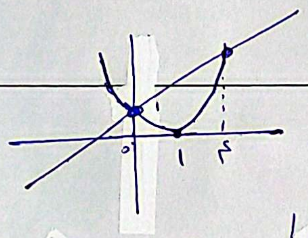
$-\frac{125}{2} \quad 125$

$h(t) = 0 \to -10t(t - 5) = 0 \to t = 0, 5 \to$ (خط) در ثانیه پنجم

۱۰

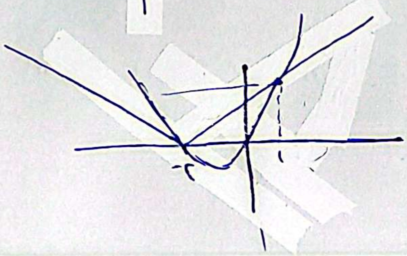
الف) ۲ نقطه

$(x-1)^2 = 2x + 1$



$x = 0, 4$

ب)



$x = -2, 1$

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

$x(x+2) = |x + 2|$