نام و نام خانوادگی ......[handwritten name]...... پاسخنامه تشریحی تکلیف شماره ۱۴..... کلاس ......یازدهم تجربی پنجم شب......

۱	$y = -x^2 + bx + 3$ $\frac{-\Delta}{4a} = 7 \rightarrow \frac{-b^2 - 12}{-4} = 7 \rightarrow b^2 + 12 = 28 \rightarrow b^2 = 16$ $b = \pm 4$ $b^2 - 4ac = b^2 + 12$
۲	الف) $f(x) = x^4 + 2x^2 + 3$ $x^2 = t \quad t^2 + 2t + 3 = 0 \Rightarrow \Delta = 4 - 4(3) = -8 < 0$ صفر ندارد ب) $f(x) = (4 - x^2)^2 - 2(4 - x^2) - 15$ $4 - x^2 = t$ $t^2 - 2t - 15 = 0$ $(t - 5)(t + 3) = 0$ → $4 - x^2 = 5 \rightarrow x^2 = -1$ ✗ $t = 5 \quad t = -3$ → $4 - x^2 = -3 \rightarrow x^2 = 7 \rightarrow x = \pm\sqrt{7}$
۳	$4x^2 - 16x + m = 0$ $\alpha, 2+\alpha \rightarrow 1, 3$ $S = \frac{-b}{a} = \frac{16}{4} = 4 \rightarrow 2\alpha + 2 = 4 \rightarrow 2\alpha = 2$ $\alpha = 1$ $P = 1 \times 3 = 3 = \frac{c}{a} \rightarrow \frac{m}{4} = 3 \rightarrow m = 12$
۴	$3x^2 - 6x + m - 1 = 0 \qquad \alpha + \beta = \frac{-b}{a} = \frac{6}{3} = 2 \qquad \alpha - \beta = \frac{\sqrt{\Delta}}{a} = \frac{\sqrt{\Delta}}{3}$ $2\alpha - \beta = 4 \rightarrow \frac{1}{2}\alpha + \frac{3}{2}\alpha + \frac{1}{2}\beta - \frac{3}{2}\beta = \frac{1}{2}(\alpha + \beta) + \frac{3}{2}(\alpha - \beta) = 4$ $3 = \frac{3}{2}\left(\frac{\sqrt{\Delta}}{3}\right) \rightarrow \sqrt{\Delta} = 6$ $b^2 - 4ac = 36 - 4(m-1)(3) = 36 - 12m + 12 = 48 - 12m$ $\sqrt{48 - 12m} = 6$ توان ۲ $\rightarrow 48 - 12m = 36 \rightarrow 12 = 12m$ $m = 1$
۵	$-mx^2 + 4x + m^2 - 2 = 0$ $c = 1 \rightarrow \frac{m^2 - 2}{-m} = 1 \rightarrow m^2 + m - 2 = 0 \rightarrow (m + 2)(m - 1) = 0$ $m = -2 \quad m = 1$ $m = 1 \rightarrow -x^2 + 4x - 1 = 0$ ✓ $m = -2 \rightarrow +2x^2 + 4x + 2 = 0$ $\alpha\beta$ ✗ $\Delta = 16 - 16 = 0 \rightarrow$ یک ریشه دارد

۶

$x^2 - mx + 3 = 0$, $\alpha\beta = 3 = \frac{c}{a}$

$\alpha\beta^2 = 4 \to \alpha\beta(\beta) = 4 \to \beta = \frac{4}{3} \to \alpha \times \frac{4}{3} = 3 \to \alpha = \frac{9}{4}$

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

$\alpha + \beta = \frac{-b}{a} = m \to m = \frac{43}{12}$

۷

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

$\alpha, \beta \sim \alpha, 3\alpha \to 1, 3$

$S = 4\alpha = 4 \to \alpha = 1$ $\quad \frac{-b}{a}$

$P = m \sim 1 \times 3 = m = 3$ $\quad \frac{c}{a}$

۸

$x^2 - 7x + 2 = 0 \to \alpha^2 - 7\alpha + 2 = 0 \xrightarrow{\div \alpha} \alpha - 7 + \frac{2}{\alpha} = 0 \to \alpha + \frac{2}{\alpha} = 7$

$\alpha^3 + \frac{8}{\alpha^3}$

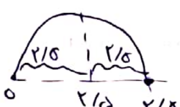
$(\alpha + \frac{2}{\alpha})^3 = 7^3 \to \alpha^3 + \frac{8}{\alpha^3} + 3(\alpha + \frac{2}{\alpha})(2) = 343$

$\alpha^3 + \frac{8}{\alpha^3} = 301$

۹

گزینه ۴ الف) $\frac{-b}{2a} = \frac{-50}{-20} = 2/5$

$-10t^2 + 50t \xrightarrow{t = 2/5} (-10)(2/5)^2 + 50(2/5) = 62/5 \to$ ارتفاع max

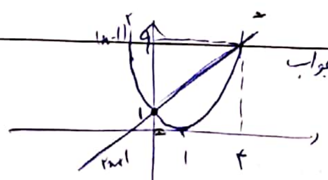


$2/5 + 2/5 = 5 \to$ زمان برخورد با زمین

زمان رسیدن به راس سهمی یکی است (؟)

۱۰

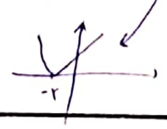
الف) $(x-1)^2 = 2x + 1$

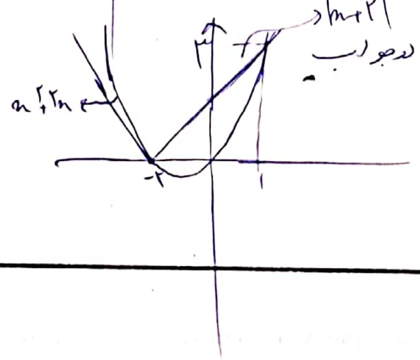


(۰,۱) دو جواب (۴,۹)

ب) $x^2 + 2x = |x+2|$

$x(x+2)$





$|x+2|$ ، x^2+2x

دو جواب $\to (-2,0)$ ، $(1,3)$