

$$y = -x^2 + 6x + 3$$

$$\Delta = b^2 - 4(a)(-1) = b^2 + 12$$

$$y_{max} = \frac{a}{4a} = \frac{-(b^2 + 12)}{4(-1)} = 3 \rightarrow b^2 + 12 = 4(3) \rightarrow b^2 = 12 \rightarrow \boxed{b = \pm 2\sqrt{3}}$$

الف) $f(x) = x^2 + 2x + 3$ $x = t \rightarrow f(t) = t^2 + 2t + 3 \rightarrow \Delta = 4 - 12 = -8$ معادله حقیقی نیست

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

$t = 5 \rightarrow x-2 = 5 \rightarrow x = 7$ حقیقی

$t = -3 \rightarrow x-2 = -3 \rightarrow x = -1$ حقیقی

$\boxed{x = \pm \sqrt{15}}$

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

$$\alpha = \beta + 2$$

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

$$P = \alpha \cdot \beta = \frac{m}{1} \rightarrow 1 \cdot 1 = \frac{m}{1} \rightarrow \boxed{m = 1}$$

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

$$x - \beta = 2 \rightarrow \beta = x - 2$$

$$S = \alpha + \beta = \frac{-(-4)}{1} = 4 \rightarrow \alpha + x - 2 = 4 \rightarrow \alpha + x = 6 \rightarrow \alpha = 6 - x$$

$$P = \alpha \cdot \beta = \frac{m-1}{1} = 0 \rightarrow m-1 = 0 \rightarrow \boxed{m = 1}$$

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

$$\frac{m-2}{-m} = 1 \rightarrow m-2 = -m \rightarrow m+m-2=0 \rightarrow 2m-2=0 \rightarrow m=1$$

$\boxed{m=1}$ حقیقی

$m=1 \rightarrow -x^2 + 4x - 1 = 0$

$\Delta = 16 - 4 = 12$ حقیقی

$\Delta = 12$ حقیقی

$$x^r - m + r = 0$$

$$\left. \begin{array}{l} \alpha \beta = r \\ \alpha + \beta = m \end{array} \right\} \rightarrow \beta = \frac{r}{\alpha}, \alpha = \frac{r}{\frac{r}{\alpha}} = \frac{r}{r}$$

$$S = m = \alpha + \beta \rightarrow m = \frac{r}{r} + \frac{r}{r} = \frac{r + r}{r} \rightarrow \boxed{m = \frac{2r}{r}}$$

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$$m^r - m + m = 0$$

$$\alpha = r\beta$$

$$S = \frac{-(-r)}{1} = \alpha + \beta \rightarrow r\beta = r \rightarrow \beta = 1, \alpha = r$$

$$p = m = \alpha + \beta \rightarrow \boxed{m = r + 1}$$

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$$m^r - Vm + r = 0 \xrightarrow{m = \alpha} \alpha^r - V\alpha + r = 0 \xrightarrow{-\alpha} \alpha - V + \frac{r}{\alpha} = 0 \rightarrow \underline{\alpha + \frac{r}{\alpha} = V}$$

$$\xrightarrow{\text{ضرب}} \alpha + \frac{r}{\alpha} + \alpha = r \rightarrow \underline{\alpha + \frac{r}{\alpha} = r - \alpha}$$

$$\alpha + \frac{r}{\alpha} = \left(\alpha + \frac{r}{\alpha} \right) \left(\alpha + \frac{r}{\alpha} - r \right) = V \times r = \boxed{Vr}$$

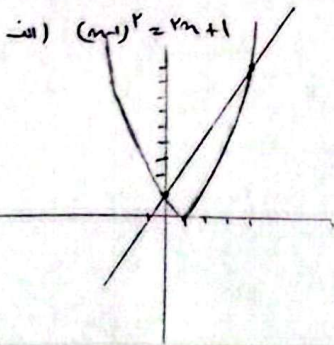
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$$h(t) = -bt^r + \Delta t$$

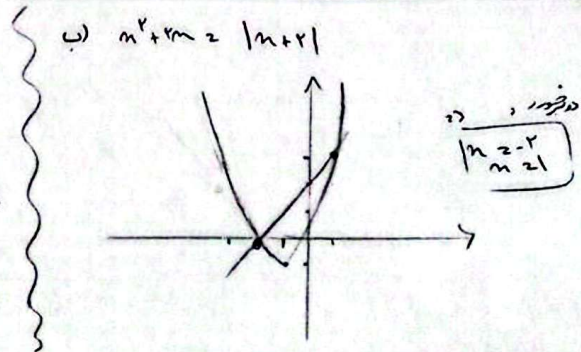
$$h_{\max} = \frac{-\Delta}{r\Delta} = \frac{-(r\Delta - 0)}{+r(-1)} = \boxed{r\Delta}$$

$$\text{في } t = 0 \rightarrow -bt^r + \Delta t = 0 \rightarrow -1 \cdot t^r + \Delta t = 0 \rightarrow t^r = \Delta \rightarrow \boxed{t = \Delta}$$

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" $m = 0$ $\rightarrow$ $m = 0$ $\rightarrow$ $m = 0$



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