

$$y = -x^2 + bx + 3 \quad y_s = \frac{-\Delta}{2a} = 1 \Rightarrow \frac{-b^2 - 12}{-2} = 1 \Rightarrow b^2 + 12 = 2 \Rightarrow b^2 = -10$$

$$\Rightarrow b^2 = 14 \Rightarrow b = \pm \sqrt{14}$$

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$$f(x) = x^2 + 14x + 3$$

$$\Delta = b^2 - 4ac = 14 - 12 = 2 > 0 \rightarrow \text{دو ریشه دارد}$$

$$b) f(x) = (x - x^2)^2 - 2(x - x^2) - 1 = 0 \quad \xrightarrow{x - x^2 = t} t^2 - 2t - 1 = 0$$

$$\Rightarrow (t - 1)(t + 1) = 0 \rightarrow t = 1 \rightarrow x - x^2 = 1 \Rightarrow x^2 = -1 \quad \text{و} \quad t = -1 \rightarrow x - x^2 = -1 \Rightarrow x^2 = 1 \Rightarrow x = \pm 1$$

$$\rightarrow t = -1 \rightarrow x - x^2 = -1 \Rightarrow x^2 = 1 \Rightarrow x = \pm 1$$

$$4x^2 - 14x + m = 0$$

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$$8 = \alpha + \alpha + 2 = \frac{-b}{a} \Rightarrow 2\alpha + 2 = \frac{14}{2} = 7 \Rightarrow 2\alpha = 5 \Rightarrow \alpha = \frac{5}{2}$$

$$\alpha + 2 = 7$$

$$p = \frac{c}{a} = \frac{m}{2} = 3 \Rightarrow m = 6$$

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

$$2\alpha - \beta = 4 \Rightarrow \beta = 2\alpha - 4 \quad \alpha + \beta = \frac{-b}{a} \Rightarrow \alpha + 2\alpha - 4 = \frac{4}{3} = 2$$

$$\Rightarrow 3\alpha = 6 \Rightarrow \alpha = 2, \beta = 0$$

$$p = \frac{c}{a} = \frac{m-1}{3} = 0 \Rightarrow m-1 = 0 \Rightarrow m = 1$$

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

$$\beta = \frac{1}{\alpha} \Rightarrow p = \alpha \times \frac{1}{\alpha} = 1 = \frac{c}{a} \Rightarrow \frac{m^2 - 2}{-m} = 1 \Rightarrow m^2 + m - 2 = 0 \Rightarrow m = 1, m = -2$$

$$\xrightarrow{m=1} -x^2 + 2x - 1 = 0 \quad \Delta = b^2 - 4ac = 4 - 4 = 0 < 0$$

$$\xrightarrow{m=-2} 2x^2 + 2x + 2 = 0 \quad \Delta = b^2 - 4ac = 4 - 16 = -12 < 0$$

$$\Rightarrow m = 1$$

$$x^2 - mx + 3 = 0 \quad \alpha\beta = 3 \Rightarrow \alpha\beta \times \beta = 3 \Rightarrow \beta = \frac{3}{\alpha}, \alpha = \frac{9}{3}$$

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$$p = \alpha\beta = \frac{c}{a} = 3$$

$$8 = \alpha + \beta = \frac{9}{3} + \frac{3}{3} = \frac{14}{3} = \frac{28}{6} = \frac{28}{6} = m$$

$$x^2 - \varepsilon x + m = 0 \quad \beta = 3\alpha$$

$$S = \alpha + \beta = \alpha + 3\alpha = 4\alpha = \frac{-b}{a} = \varepsilon \Rightarrow \alpha = 1, \beta = 3$$

$$P = \alpha\beta = \frac{c}{a} \Rightarrow \psi = \frac{m}{1} \Rightarrow \underline{m = 3}$$

$$x^2 - vx + r = 0 \Rightarrow \alpha^2 - v\alpha + r = 0 \Rightarrow \alpha^2 + r = v\alpha$$

$$(a+b)^3 = a^3 + b^3 + 3ab(a+b) \Rightarrow \left(\alpha + \frac{r}{\alpha}\right)^3 = \alpha^3 + \frac{r^3}{\alpha^3} + 4\left(\alpha + \frac{r}{\alpha}\right)$$

$$\Rightarrow \alpha^3 + \frac{r^3}{\alpha^3} = \left(\alpha + \frac{r}{\alpha}\right)^3 - 4\left(\alpha + \frac{r}{\alpha}\right) = v^3 - \varepsilon r = 3\varepsilon^3 - 4\varepsilon = 3 \cdot 1$$

$$\alpha + \frac{r}{\alpha} = \frac{\alpha^2 + r}{\alpha} = \frac{v\alpha}{\alpha} = v$$

$$h(t) = -1 \cdot t^2 + \omega \cdot t \quad y_s = \frac{-\Delta}{\varepsilon a} = \frac{-4\omega \cdot \omega}{-4} = 4\omega \cdot \omega \rightarrow \text{ارتفاع بالسرعة} \rightarrow$$

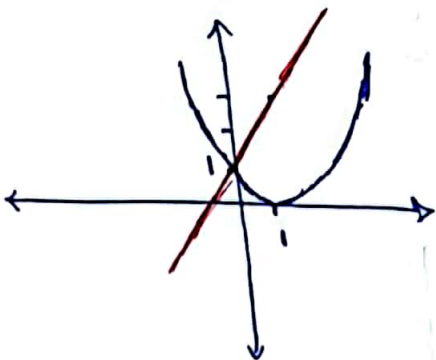
$$\xrightarrow{h=0} -1 \cdot t^2 + \omega \cdot t = 0 \Rightarrow t(\omega - 1 \cdot t) = 0 \rightarrow t = 0$$

$\rightarrow t = \omega \rightarrow$ زمانه که دوباره به زمین برخورد می کند

$$\text{الف) } (x-1)^2 = 2x+1$$

$$x=1$$

$$x=\varepsilon$$



$$\text{ب) } x^2 + 2x = |x+2|$$

$$x=-2$$

$$x=1$$

