

$$y = -x^2 + bx + 3 \rightarrow -\frac{b}{2a} = -\frac{b}{-2} = \frac{b}{2} \rightarrow -\frac{b^2}{4} + \frac{b^2}{2} + 3 = 1 \Rightarrow$$

$$\frac{-b^2 + 2b^2}{4} = 1 \rightarrow b^2 = 4 \Rightarrow \underline{b = \pm 2}$$

-۱

(۵)

-۲

$$x^2 = t \rightarrow f(x) \rightarrow t^2 + 2t + 3 \rightarrow \Delta = 4 - 4(1)(3) \rightarrow$$

معادله هیچگاه
صفر نمی شود

(الف)

(۵)

$$x - x^2 = t \rightarrow f(x) = t^2 - 2t - 1 \Delta \rightarrow (t - 1)(t + 3) \rightarrow t = 1$$

$\searrow$
 $t = -3$

(ب)

$$x - x^2 = 1 \rightarrow x^2 = -1 \text{ غلط}$$

$$x - x^2 = -3 \rightarrow x^2 = 4 \rightarrow x = \pm \sqrt{4}$$

$$x^2 - 4x + 4 = 0 \rightarrow \alpha + \beta = -\frac{(-4)}{1} \rightarrow 2\alpha + 2 = 4 \rightarrow 2\alpha = 2 \rightarrow$$

$\alpha = 1$
 $\beta = 3$

-۳

(۱,۷۵)

$$\alpha\beta = \frac{c}{a} = 4 \Rightarrow \frac{m}{1} = 4 \Rightarrow m = 4$$

$x^2 - 4x + 4 = 0$
 $\Delta > 0 \checkmark$

$$2\alpha - \beta = 4 \rightarrow \beta = 2\alpha - 4$$

-۴

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

$$\alpha + \beta = 2 \rightarrow \beta = 2 - \alpha \Rightarrow 2 - \alpha = 2\alpha - 4 \Rightarrow 3\alpha = 6 \rightarrow \alpha = 2$$

$\beta = 0$

(۵)

$$\alpha\beta = 0 \rightarrow \frac{c}{a} = 0 \Rightarrow \frac{m-1}{1} = 0 \rightarrow m-1 = 0 \rightarrow m = 1$$

$x^2 - 4x = 0$
 $\Delta > 0 \checkmark$

-۵

$$-m^r + r^n + m^r - r = 0 \rightarrow \text{نقل } \underline{m^r} \rightarrow \frac{\alpha\beta=1}{\alpha} \frac{C}{a} = 1 \rightarrow \frac{m^r - r}{-m} = 1 \rightarrow$$

$$m^r - r = -m \rightarrow m^r + m - r = 0 \rightarrow m=1$$

$$\searrow m=-r$$

(2)

$$m=1 \rightarrow -m^r + r^n - 1 = 0 \quad \Delta = 14 - 4(1)(-1) = 12 \quad \Delta > 0 \quad \checkmark \rightarrow m=1 \quad \checkmark$$

$$m=-r \rightarrow +r^n + r^n + r = 0 \quad \Delta = 14 - 4(r)(r) = 0 \quad \Delta = 0 \quad \text{مكرر}$$

$$m^r - mn + r = 0 \rightarrow \alpha\beta^r = r$$

-4

$$\alpha\beta = \frac{C}{a} = r \Rightarrow (\alpha\beta)(\beta) = r \Rightarrow \beta = \frac{r}{\alpha}, \alpha = \frac{9}{r} \rightarrow$$

(1, 10)

$$S = -\frac{(-m)}{1} \rightarrow m = \frac{9}{r} + \frac{r}{r} = \frac{r^2 + 9}{r} = \frac{r^2}{r} \quad \checkmark \quad 2^r - \frac{r^2}{r} + r = 0 \quad \checkmark$$

$$m^r - mn + m = 0 \quad \alpha \rightarrow \beta \rightarrow \alpha + \beta = r \rightarrow r\alpha = r \rightarrow \alpha = 1$$

-5

$\swarrow$
 r_α

$$\beta = r$$

(1, 10)

$$m = \alpha\beta = r \times 1 = r \quad 2^r - r\alpha + r = 0 \quad \checkmark$$

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

$$\alpha^r + \frac{1}{\alpha^r} = \left(\alpha + \frac{r}{\alpha}\right)^r - 4\left(\alpha + \frac{r}{\alpha}\right) =$$

-1

$$\alpha\beta = r \rightarrow \beta = \frac{r}{\alpha}$$

$$\downarrow \quad \downarrow$$

$$\beta \quad \beta$$

$$(\alpha + \beta)^r - 4(\alpha + \beta) = r^2 - 4r = r(r - 4) = 0$$

(5)

$$S = v$$

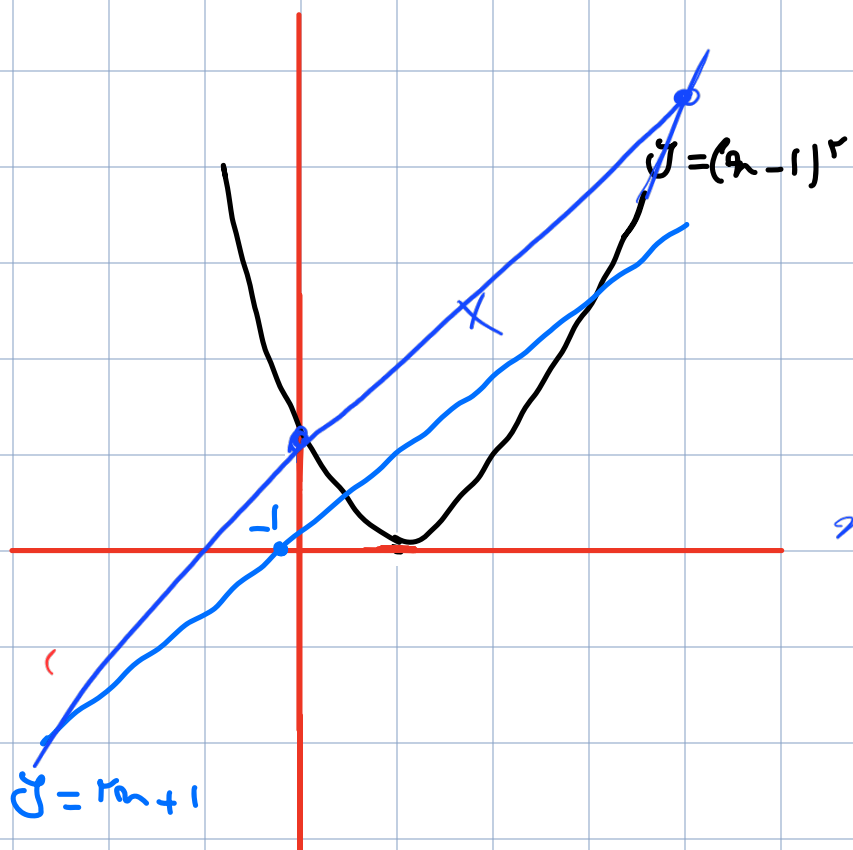
$$h(t) = -10t^r + \Delta_0 t \rightarrow \frac{-b}{r_a} \rightarrow \frac{-\Delta_0}{-r_0} = \frac{\Delta}{r} \rightarrow -10\left(\frac{r_0}{r}\right) + \Delta_0\left(\frac{\Delta}{r}\right) =$$

-9

$$\frac{-r\Delta_0}{r} + \frac{r\Delta_0}{r} = \frac{-r\Delta_0 + \Delta_0 r}{r} = \frac{r\Delta_0}{r} = \frac{r\Delta}{r}$$

(5)

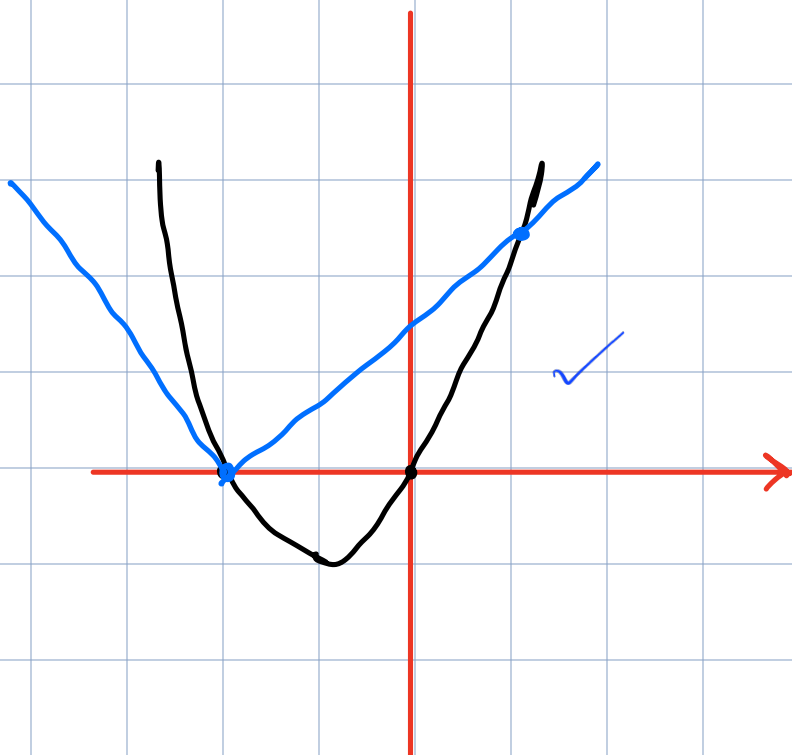
$h=0 \rightarrow 1. t(\Delta-t)=0 \rightarrow t=0$ غق ق 0
 $\rightarrow t=\Delta$ زمان برخورد به زیری



دو نقطه برخورد

$n=0, 4$

1



دو نقطه برخورد