

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

$$\frac{-b^2 + 4b^2}{4} = 1 \rightarrow b^2 = 16 \Rightarrow \underline{b = \pm 4}$$

الف) $x^2 = t \rightarrow f(t) \rightarrow t^2 + 2t + 3 \rightarrow \Delta = 4 - 4(1)(3) \rightarrow$ معادله هویکوه صفر نشود

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

$$x^2 - x = 1 \rightarrow x^2 = 1 + 1 \Rightarrow \underline{x = \pm \sqrt{2}}$$

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

۳) $x^2 - 14x + m = 0 \rightarrow \alpha + \beta = -\frac{(-14)}{1} \rightarrow 2\alpha + 2 = 14 \rightarrow 2\alpha = 12 \rightarrow$
 $\alpha = 6$
 $\beta = 8$

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

$$2\alpha - \beta = 14 \rightarrow \beta = 2\alpha - 14$$

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

$$\alpha + \beta = 4 \rightarrow \beta = 4 - \alpha \Rightarrow 4 - \alpha = 2\alpha - 14 \Rightarrow 3\alpha = 18 \rightarrow \alpha = 6$$

 $\beta = 0$

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

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

$$m^r - r = -m \rightarrow m^r + m - r = 0 \rightarrow \begin{matrix} m=1 \\ m=-r \end{matrix}$$

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

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

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

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

$$S = -\frac{(-m)}{1} \rightarrow m = \frac{9}{r} + \frac{r}{r} = \frac{r^2 + 14}{1r} = \frac{r^2}{1r}$$

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

$$\beta = r$$

$$m = \alpha \beta = r \times 1 = r$$

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

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

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

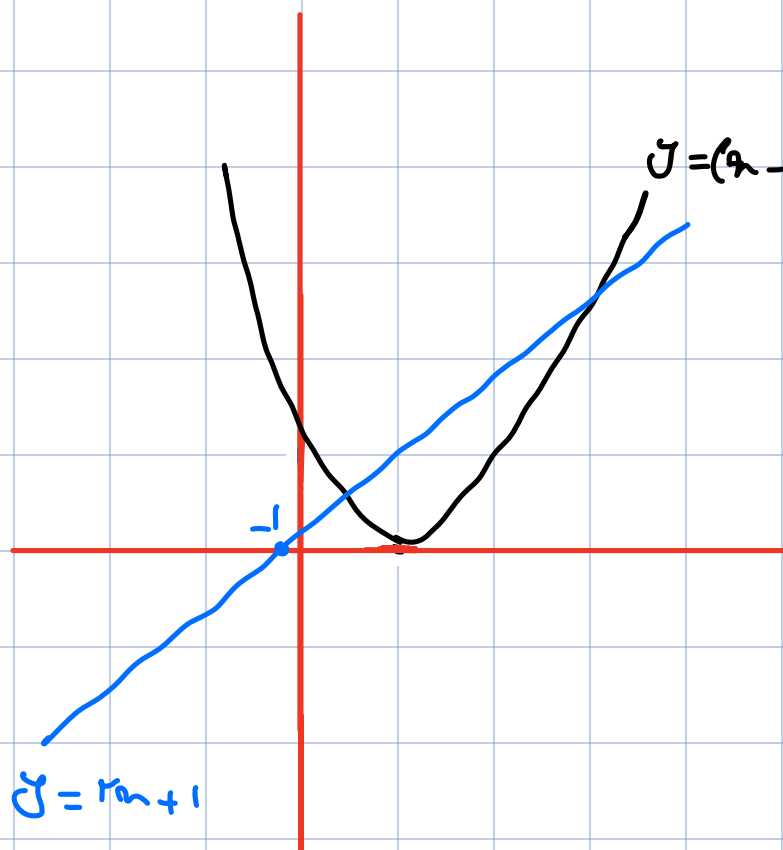
$$S = V$$

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

$$h(t) = -10t^r + 20t \rightarrow \frac{b}{r_a} \rightarrow \frac{-20}{-r_0} = \frac{20}{r} \rightarrow -10 \left(\frac{r^2}{r} \right) + 20 \left(\frac{20}{r} \right) =$$

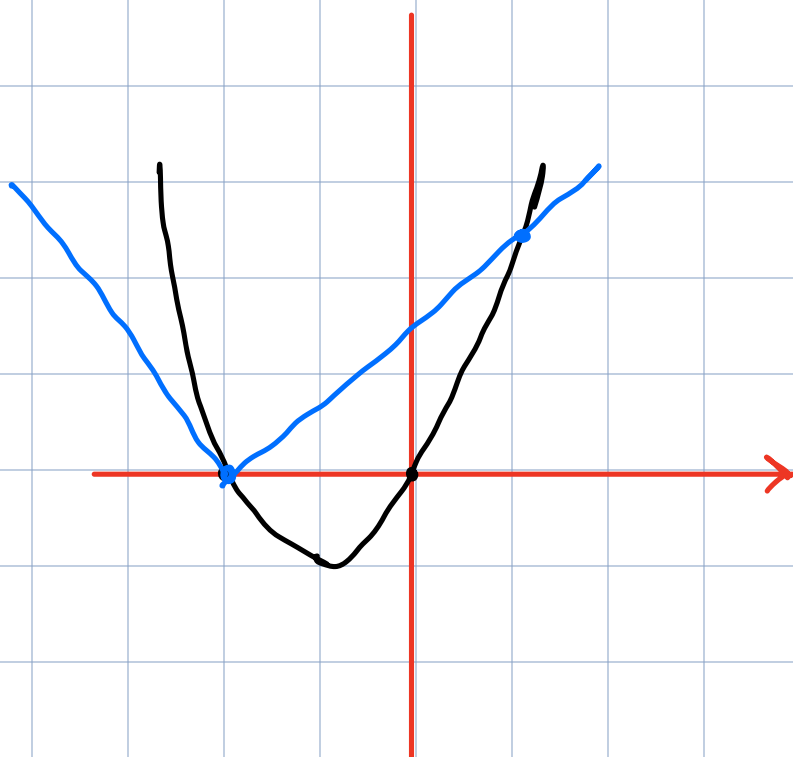
$$-\frac{r^2 20}{r} + \frac{r 20}{r} = \frac{-r^2 20 + 20r}{r} = \frac{r^2 20}{r} = \frac{1r^2}{r}$$

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



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دو نقطه برخورد



دو نقطه برخورد