

$$y = x^2 + bx + 3$$

مردم با رسم رفتار

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$$\frac{-\Delta}{2a} = v \rightarrow \frac{-b^2 + 12}{-2} = v \rightarrow b^2 = 12 \rightarrow b = \pm 2\sqrt{3}$$

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

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$$\rightarrow x^2 + 2x + 3 = 0 \rightarrow x = -1 \pm \sqrt{1 - 3} = -1 \pm \sqrt{-2} \rightarrow b^2 - 4ac = 4 - 12 = -8 < 0$$

$\Delta < 0 \rightarrow$ این تابع هیچ نزاری

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$$f(x) = (x - x^2)^2 - 2(x - x^2) - 1 = 0$$

$$\left\{ \begin{array}{l} x - x^2 = t \\ t^2 - 2t - 1 = 0 \end{array} \right. \rightarrow (t - 1) \pm \sqrt{2}$$

$$\left\{ \begin{array}{l} t = 1 + \sqrt{2} \rightarrow x - x^2 = 1 + \sqrt{2} \rightarrow x^2 - x + 1 + \sqrt{2} = 0 \\ t = 1 - \sqrt{2} \rightarrow x - x^2 = 1 - \sqrt{2} \rightarrow x^2 - x + 1 - \sqrt{2} = 0 \end{array} \right. \rightarrow x = \frac{1 \pm \sqrt{1 - 4(1 \pm \sqrt{2})}}{2}$$

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

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$$\alpha + \beta = 14$$

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$$\alpha = \beta + 2 \rightarrow \beta + 2 + \beta = 14 \rightarrow 2\beta = 12 \rightarrow \beta = 6, \alpha = 8$$

$$p = \frac{m}{\Sigma} \Rightarrow 3\alpha \leq \frac{m}{\Sigma} \Rightarrow m \leq 12 \rightarrow x^2 - 14x + 12 = 0 \rightarrow \Delta > 0 \checkmark$$

$$x^2 - 14x + m - 1 = 0 \quad 2\alpha - \beta = 14 \rightarrow \frac{1}{p}\alpha + \frac{1}{p}\beta + \frac{p}{1-p}\alpha - \frac{p}{1-p}\beta = \Sigma$$

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$$\rightarrow \frac{1}{p}(\alpha + \beta) + \frac{p}{1-p}(\alpha - \beta) = 14 \rightarrow \alpha - \beta = 2$$

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$$\alpha - \beta = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{196 - 4(m-1)}}{1} = 2 \xrightarrow{p=1/2} 196 - 4(m-1) = 16$$

$$m - 1 = 5 \rightarrow m = 6$$

$$x^2 - 14x = 0 \rightarrow \Delta > 0 \checkmark$$

$$-m\alpha^r + \Sigma n + m^r - r = 0$$

$$(r + \Sigma m^r - \Lambda m) = 0$$

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$$\Delta > 0 \rightarrow (r - \Sigma(-m)(m^r - r))$$

$$p_s | \frac{m^r - r}{-m} s | \rightarrow m^r + m - r_s = 0$$

$$(m+r)(m-1)_s = 0$$

$$\begin{cases} m_s | \rightarrow \Delta > 0 \checkmark \\ m = -r - \bar{0}\bar{0}\bar{0} \Delta_s = X \end{cases}$$

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$$m^r - m\alpha + m^r_s$$

$$\alpha B^r = \Sigma \rightarrow \frac{(\alpha B)(B)_s}{r} \rightarrow B = \frac{r}{r} \rightarrow m_s \frac{q}{\Sigma} + \frac{\Sigma}{r} s \frac{r}{r}$$

$$\alpha = \frac{q}{\Sigma}$$

$$m^r - \frac{r}{r} \alpha + m^r_s \rightarrow \Delta > 0 \checkmark$$

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$$m^r - r\alpha + m_s = 0$$

$$m_s \alpha B = \Lambda r^r$$

$$\alpha + B_s r$$

$$\alpha = r B$$

$$r B = \Sigma \rightarrow B = 1, \alpha = r$$

$$m^r - \Sigma \alpha + m^r_s \rightarrow \Delta > 0 \checkmark$$

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$$m^r - v\alpha + m_s = 0$$

$$\alpha^r + \frac{\Lambda}{\alpha^r} s (\alpha + \frac{r}{\alpha}) (\alpha^r - r + \frac{\Sigma}{\alpha^r}) = r = 1$$

$$\alpha^r - r + \frac{\Sigma}{\alpha^r} = (\alpha + \frac{r}{\alpha})^r - r = \Sigma q - r = r^r$$

$$\alpha + \frac{r}{\alpha} = \frac{\alpha^r + r}{\alpha} \rightarrow \frac{v\alpha - r + r}{\alpha} = v$$

$$h(t) = -1 \cdot t^r + \Delta \cdot t$$

$$\begin{aligned} \text{C6: } & \rightarrow -1 \cdot t(t - \Delta) = 0 \\ & \left. \begin{aligned} t &= 0 \\ t &= \Delta \checkmark \end{aligned} \right\} \end{aligned}$$

$$\begin{aligned} & \left[\frac{-\Delta}{-r} s \frac{\Delta}{r} \rightarrow t \right] \\ & \left[-1 \cdot \left(\frac{r\Delta}{\Sigma} \right) + \Delta \cdot \left(\frac{\Delta}{r} \right) = \frac{12\Delta}{r} \rightarrow h \right] \end{aligned}$$

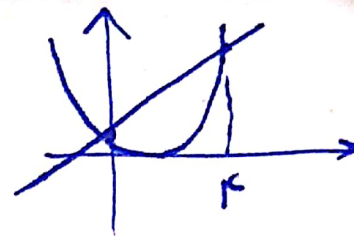
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$$\text{الف) } (n-1)^2 = 2n+1$$

$$\frac{0}{1}$$

$$n^2 - 2n + 1 = 2n + 1$$



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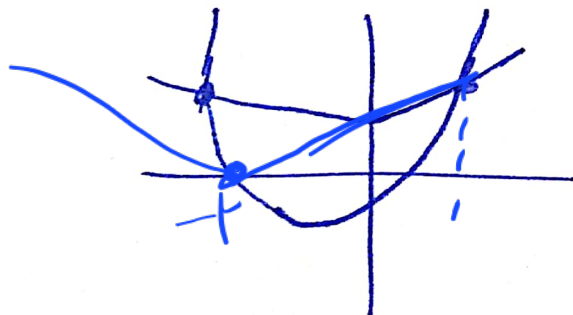
$$n^2 - 2n + 1 = 2n + 1 \rightarrow n(n-2) = 0 \rightarrow n = 0, 2$$

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$$\text{ب) } \underbrace{n^2 + 2n = |n+2|}_{n(n+2)} \Rightarrow \begin{cases} n+2, n^2+2n \rightarrow n^2+n-2 \rightarrow n = -2, 1 \\ n+2, -n^2-2n \rightarrow n^2+4n+2 = 0 \rightarrow n = -2 \pm \sqrt{2} \end{cases}$$

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