

$$y = -x^2 + bx + 13$$

$$\max = 17, b = ?$$

$$y_s = \frac{\Delta}{-2a} = 17 \Rightarrow \frac{b^2 + 12}{-2 \times (-1)} = 17 \Rightarrow b^2 + 12 = 34$$

$$b^2 = 22$$

$$b = \pm \sqrt{22}$$

$$\text{if } b = \sqrt{22} \Rightarrow y = -x^2 + \sqrt{22}x + 13 \checkmark$$

$$\text{if } b = -\sqrt{22} \Rightarrow y = -x^2 - \sqrt{22}x + 13 \checkmark$$

$$\text{الف) } f(x) = x^2 + 2x^2 + 13$$

$$\text{if } x^2 = t \Rightarrow f(x) = t^2 + 2t + 13 \rightarrow \Delta t$$

نماد ریشه دقت

$$\text{ب) } f(x) = (x^2 - 1)^2 - 2(x^2 - 1) - 15 = 0$$

$$t^2 - 2t - 15 = 0 \quad \text{عقل}$$

$$(t - 5)(t + 3) = 0 \Rightarrow t = 5 \rightarrow x^2 - 1 = 5 \Rightarrow x^2 = 6 \Rightarrow x = \pm \sqrt{6}$$

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

$$\text{ریشه ها} \rightarrow \alpha, \alpha + 2$$

$$S = -\frac{b}{a} = \frac{14}{1} = 14 \Rightarrow \alpha + \alpha + 2 = 14 \Rightarrow 2\alpha + 2 = 14 \Rightarrow 2\alpha = 12 \Rightarrow \alpha = 6$$

$$P = \frac{c}{a} = \frac{m}{1} \rightarrow \frac{m}{1} = 12 \Rightarrow m = 12$$

$$1, 3 \rightarrow \text{ریشه ها}$$

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

$$2\alpha - \beta = 1$$

$$m = ?$$

$$2\alpha - \beta = 1 \Rightarrow \beta = 2\alpha - 1$$

$$S = -\frac{b}{a} = \frac{4}{1} = 4 \Rightarrow 2\alpha - 1 + \alpha = 4 \Rightarrow 3\alpha - 1 = 4 \Rightarrow 3\alpha = 5 \Rightarrow \alpha = \frac{5}{3}$$

$$\beta = 2\alpha - 1 \rightarrow \beta = \frac{10}{3} - 1 = \frac{7}{3}$$

$$P = \frac{m-1}{1} = 12 \Rightarrow m-1 = 12 \Rightarrow m = 13$$

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

$$P = \frac{c}{a} = \frac{m-1}{-m} = 1$$

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

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

$$\Delta = 16 - 4 = 12 \Rightarrow m = 1$$

و اما پرسش اول: حاصل ضرب ریشه ها برابر ۱ است

در این ریشه ها

(سوال تکرار پرسش اول)

$$\lambda^r - m\lambda + \mu = 0$$

$$\alpha\beta^r = r$$

$$P = \frac{c}{a} = \frac{\mu}{1} = \alpha \cdot \beta$$

$$\text{if } \alpha\beta = \mu, \alpha\beta^r = r \Rightarrow (\alpha\beta)\beta = r \xrightarrow{\alpha\beta = \mu} \mu\beta = r \Rightarrow \beta = \frac{r}{\mu}$$

$$\text{if } \alpha\beta = \mu \xrightarrow{\beta = \frac{r}{\mu}} \frac{r}{\mu} \times \alpha = \mu \Rightarrow \alpha = \mu \times \frac{\mu}{r} = \frac{\mu^2}{r}$$

$$S = -\frac{b}{a} = M \Rightarrow \alpha + \beta = M \Rightarrow \frac{r}{\mu} + \frac{\mu^2}{r} = M \Rightarrow M = \frac{14 + \mu^2}{14} = \frac{r\mu}{14}$$

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

$$\alpha, \beta \quad \beta = \mu\alpha \Rightarrow \alpha, \mu\alpha$$

$$S = -\frac{b}{a} = r \Rightarrow \mu\alpha + \alpha = r \Rightarrow r\alpha = r \Rightarrow \alpha = 1$$

$$P = \alpha \cdot \beta \Rightarrow P = \mu\alpha^r = m \xrightarrow{\alpha=1} m = \mu$$

$$\lambda^r - U\lambda + r = 0$$

$$\alpha^{\mu} + \frac{\lambda}{\alpha^c} = ?$$

$$\left(\alpha + \frac{r}{\alpha}\right)^{\mu} = \alpha^{\mu} + \frac{\lambda}{\alpha^c} + \mu\alpha^{\mu-1} \frac{r}{\alpha} + \mu\alpha^{\mu-2} \frac{r^2}{\alpha^2} \Rightarrow \left(\alpha + \frac{r}{\alpha}\right)^{\mu} = \alpha^{\mu} + \frac{\lambda}{\alpha^c} + 4\alpha + \frac{12}{\alpha}$$

$$\left(\frac{\alpha^r + r}{\alpha}\right)^{\mu} = \alpha^{\mu} + \frac{\lambda}{\alpha^c} + \frac{4\alpha^r + 12}{\alpha} \xrightarrow{\alpha^r + r = U\alpha} \left(\frac{U\alpha}{\alpha}\right)^{\mu} = \alpha^{\mu} + \frac{\lambda}{\alpha^c} + \frac{4(\alpha^r + r)}{\alpha}$$

$$\alpha^r - U\alpha + r = 0 \Rightarrow \alpha^r + r = U\alpha$$

$$U - \frac{r}{\alpha} = \alpha^{\mu} + \frac{\lambda}{\alpha^c} \Rightarrow \alpha^{\mu} + \frac{\lambda}{\alpha^c} =$$

$$\mu\alpha^{\mu} - \frac{r}{\alpha} = \mu \cdot 1$$

$$L(t) = -1 \cdot t^r + d \cdot t$$

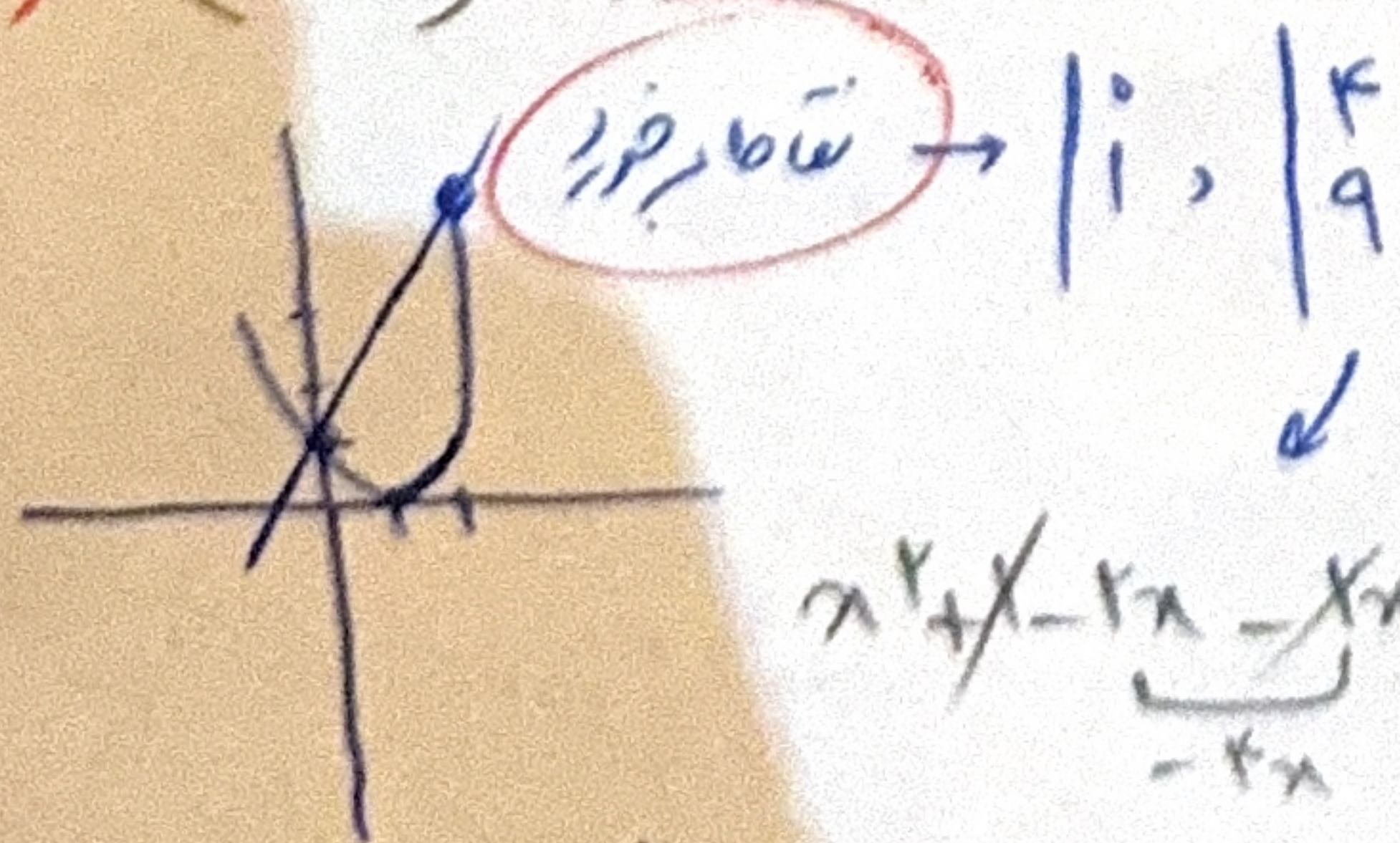
$$L_{\max} \rightarrow y_s \text{ قبل } \Rightarrow x_s = \frac{r \cdot d}{r \cdot x + 1} = \frac{d}{r} \Rightarrow y_s = -1 \times \frac{r \cdot d}{r} + d \cdot x \frac{d}{r} = \frac{-12d + r \cdot d}{r} = \frac{12d}{r}$$

$$\text{قيمة } L \rightarrow -1 \cdot t^r + d \cdot t = 0 \Rightarrow t(-1 \cdot t + d) = 0$$

$$t = 0 \text{ و } t = d$$

لـ نقطة

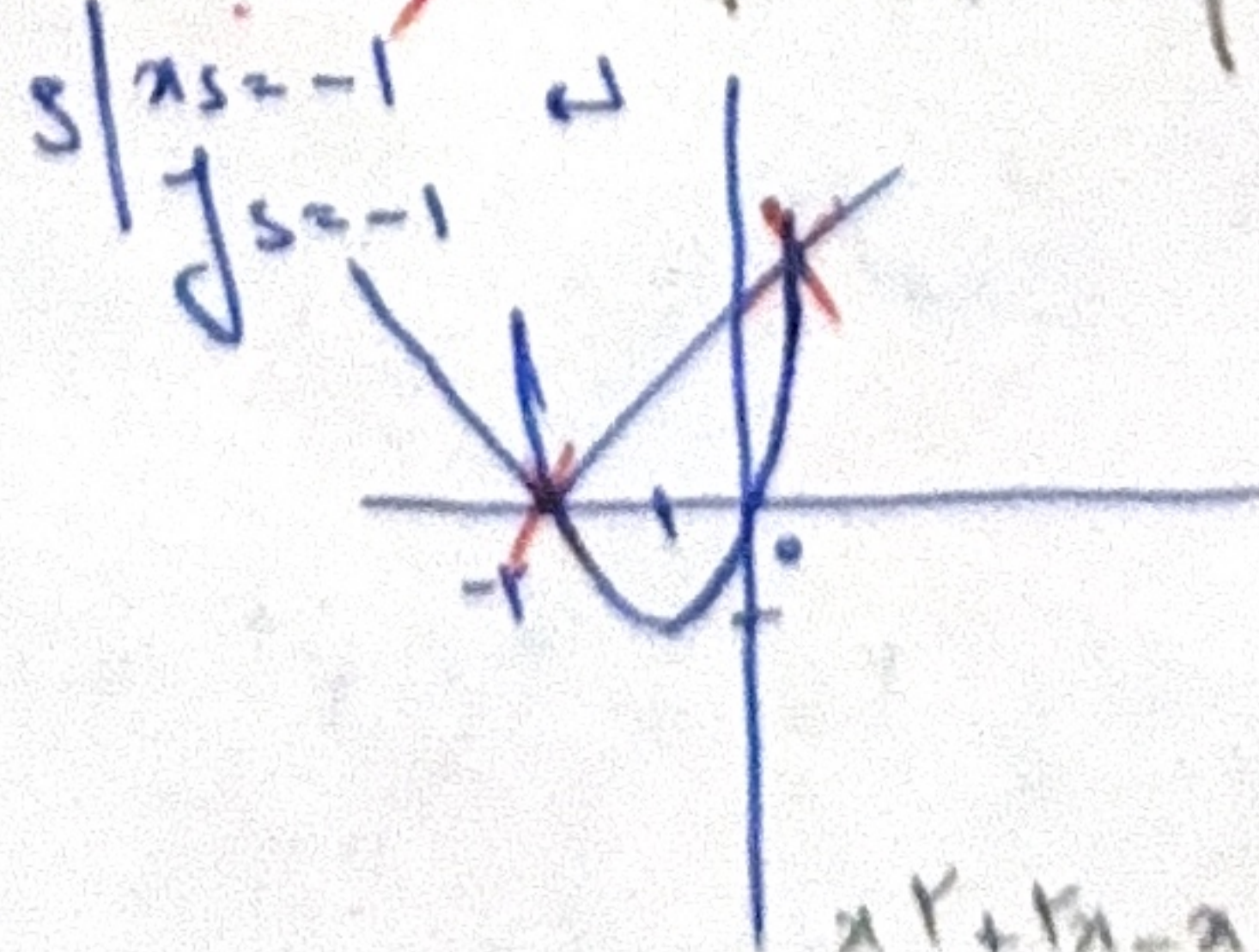
$$(a) \quad (x-1)^r = rx + 1$$



$$x^r + x - rx - 1 = 0$$

$$x^r - rx = 0 \Rightarrow x = 0 \text{ و } x = r$$

$$(b) \quad x^r + rx = |x+r|$$



$$x^r + rx = |x+r|$$

$$x^r + rx - x - r = x^r + x - r - r = (x+r)(x-1)$$

$$x = -r, 1, -1$$

$$\text{if } x = -1 \quad x^r + rx = |x+r| \Rightarrow |x| = -r \Rightarrow -1 \neq -r$$

$$-1 \neq -r$$