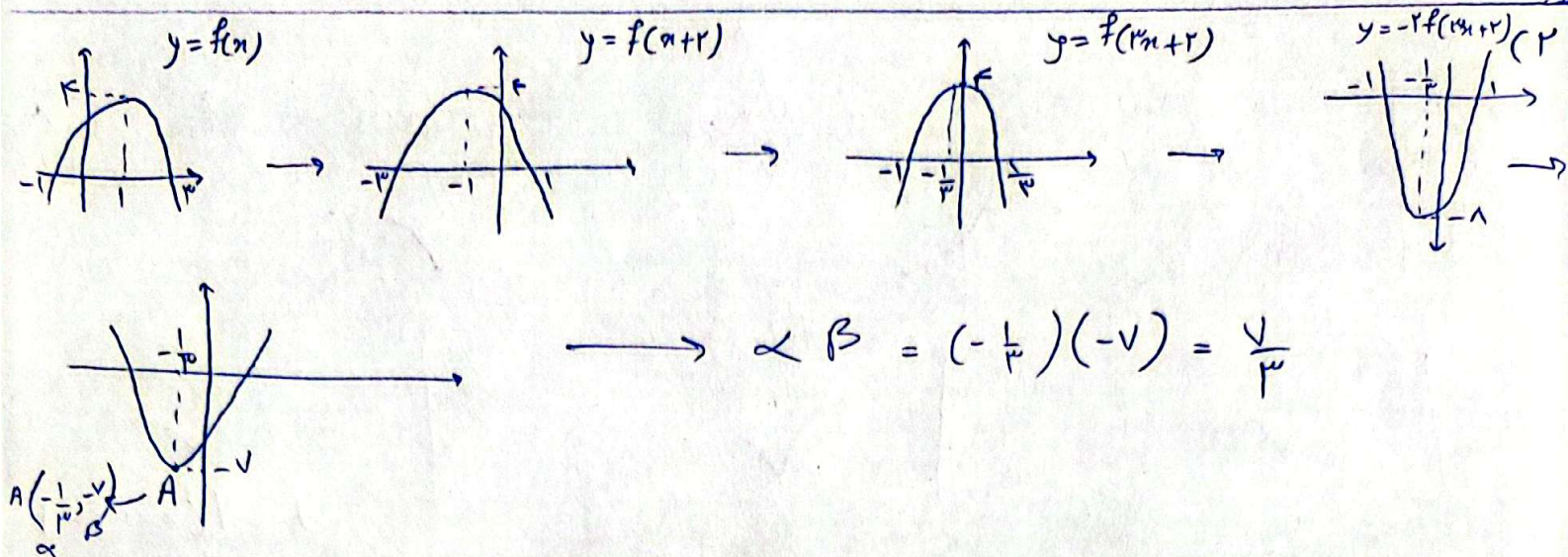


$$y = -\frac{1}{p}x^2 + \frac{r}{2}x + 1 = -\frac{1}{p}(x - x_{\text{ext}})^2 + y_{\text{ext}} \xrightarrow{(f, r)} y = -\frac{1}{p}(x - \varepsilon)^2 + r \rightarrow (1)$$

$$y = 0 \rightarrow -\frac{1}{p}(x - \varepsilon)^2 + r = 0 \rightarrow (x - \varepsilon)^2 = q \rightarrow \begin{cases} x - \varepsilon = r \rightarrow x = V \\ x - \varepsilon = -r \rightarrow x = 1 \end{cases}$$



$$y = r - \sqrt{rx} \xrightarrow{\text{تبدیل}} y = r - \sqrt{r(x+1)} \xrightarrow{\text{تبدیل}} y = \sqrt{r(n+1)} - r \xrightarrow{\text{تبدیل}} (r)$$

$$y = \sqrt{r(n+1)} + r \rightarrow \sqrt{rn+r} = \frac{r}{r} \rightarrow \sqrt{rn+r} = \frac{r}{r} \rightarrow rn+r = \frac{r}{r} \rightarrow rn = \frac{1}{r} \rightarrow n = \frac{1}{r}$$

$$y = f(x-1) + g(x+1) \rightarrow D = (-r, \delta) \quad (K)$$

$$Df = (a, \varepsilon] \rightarrow a < x-1 \leq \varepsilon \rightarrow a+1 < x \leq \varepsilon+1 \rightarrow Df(x+1) = (a+1, \delta]$$

$$Dg = [-1, b) \rightarrow -1 \leq x+1 < b \rightarrow -2 \leq x < b-1 \rightarrow Dg(x+1) = [-r, b-1) \xrightarrow{\cap} (a+1, b-1)$$

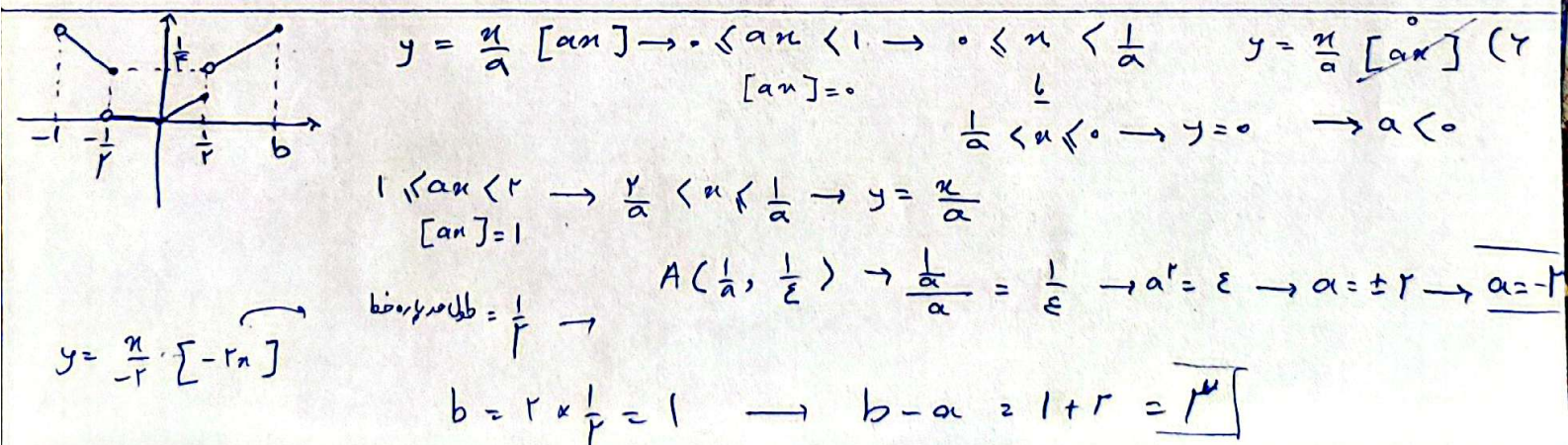
$a = -r \leftarrow \quad \rightarrow b = r$

$$y_r = \sqrt{|rf(x) - r|} \rightarrow |rf(x) - r| \geq 0 \xrightarrow{\text{تبدیل}} D_r = D_f(n) \quad (a)$$

$$y_1 = f\left(\frac{x}{r} + 1\right) \rightarrow y = f(x) \quad D_1 = [-r, a] \rightarrow D_f = ?$$

$$\xrightarrow{\quad} -r \leq x \leq a$$

$$-\frac{r}{r} \leq \frac{x}{r} \leq \frac{a}{r} \rightarrow -\frac{1}{r} \leq \frac{x}{r} + 1 \leq \frac{a}{r} \rightarrow D_f = \left[-\frac{1}{r}, \frac{a}{r}\right] \rightarrow D_r = \left[-\frac{1}{r}, \frac{a}{r}\right]$$

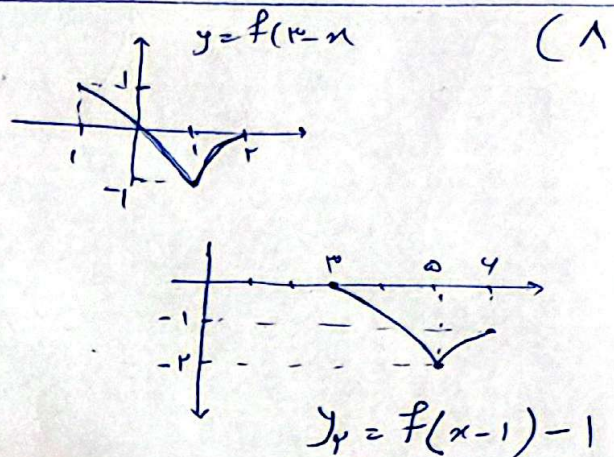
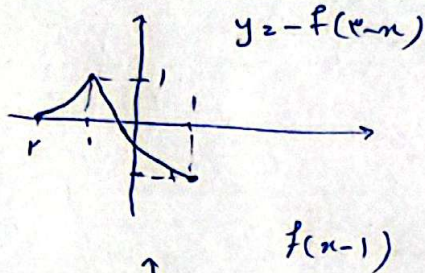
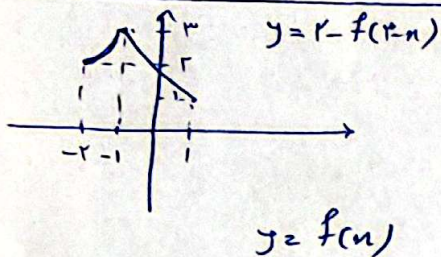


$$f(x) = \log_r x \xrightarrow{\text{تحويل}} y = \log_r x+r \xrightarrow{\text{تحويل}} y = -\log_r x+r \quad (V)$$

$$g(x) = -\log_r x+r \rightarrow g(-1) = -1 \quad \leftarrow y = -\log_r x+r \leftarrow y = -\log_r x+r$$

$$\rightarrow g(-9) = -9$$

$$g(-1) + g(-9) = -1 - 9 = -10$$



$$f(x) = \left| \frac{x+1}{x+1} \right| \xrightarrow{\text{تحويل}} f(x) = \left| \frac{(x-1)+1}{r(x-1)+1} \right| \xrightarrow{\text{تحويل}} g(x) = \left| \frac{x-1}{r(x-1)} \right| + 1 \quad (9)$$

$$x + g(x) < 0 \rightarrow x + 1 + \left| \frac{x-1}{r(x-1)} \right| < 0 \rightarrow \left| \frac{x-1}{r(x-1)} \right| < -x-1 \rightarrow \frac{x-1}{r(x-1)} < -x-1 \rightarrow \frac{r(x-1)-x}{r(x-1)} < 0 \rightarrow \frac{-\sqrt{r} \sqrt{r}}{-\sqrt{r} \sqrt{r}} < 0$$

$$x \in (-\infty, -\sqrt{r})$$

$$y = x^r \rightarrow f(x) = (x-r)^r + r \quad (تحويل)$$

$$g(x) = \sqrt{-f'(x) + r f(x)} \rightarrow (10)$$

$$g(x) = \sqrt{-f(x) (f(x) - r)}$$

$$\frac{-1}{-} \frac{r}{+} \rightarrow D_g = [-1, r]$$

$$\rightarrow f(x) = r \rightarrow x-r=1 \rightarrow x=r$$

$$\rightarrow f(x)=0 \rightarrow x-r=-1 \rightarrow x=-1$$