

$$f(x) = y \Rightarrow r^{Ax+B} = r^x \begin{cases} x=1 \Rightarrow r^{A+B} = r^1 \Rightarrow A+B=1, A=B \\ x=2 \Rightarrow r^{2A+B} = r^2 \Rightarrow 2A+B=2 \rightarrow 2A=2 \rightarrow A=1, B=1 \end{cases}$$

$f(x) = r^{x-1}$ $\xrightarrow[\text{نقطه شیب!}]{\text{نقطه شیب!}}$ $f(0) = r^{0-1} = r^{-1} = \frac{1}{r}$ $(0, \frac{1}{r})$ $\xrightarrow[\text{نقطه شیب!}]{\text{نقطه شیب!}}$

$$\log_r (r^x + 10) = x + r \Rightarrow r^x + 10 = r^{x+r} \Rightarrow (r^x)^r - 1(r^x) + 10 = 0$$

$$r^x = t \Rightarrow t^r - 1t + 10 = 0 \rightarrow (t-2)(t-r) = 0$$

$$\begin{cases} t=2 \rightarrow r^x = 2 \rightarrow x = \log_r 2 \\ t=r \rightarrow r^x = r \rightarrow x = \log_r r = 1 \end{cases}$$

$x_1 + x_2 = \log_r 10$

$$\left(\log_r r\right)^r + \log_r (r^r) = \left(\log_r r\right)^r + \left(\log_r r + r \log_r r\right) \left(r \log_r r + r \log_r r\right)$$

$$t^r + \frac{(t+r-t)(r-t+r-t)}{r-t} = t^r + r = t^r = r$$

$$\log_r (r^r - r^{n+1}) + \log_r (1-r)^n = a \rightarrow \log_r (1-r)^n = a \rightarrow (1-r)^n = 10^a$$

$$\rightarrow 1-r = 10^{\frac{a}{n}} \rightarrow r = 1 - 10^{\frac{a}{n}}$$

$$\log(r-n) - \log \frac{1}{(n-r)^r} = r \rightarrow \log \left((r-n) \times (n-r)^r \right) = r \rightarrow \log (r-n)^r = r$$

$$\log \left(\frac{r-n}{(n-r)^r} \right) = r \rightarrow (r-n)^r = 10^r \rightarrow r-n=1 \rightarrow n=r-1$$

