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①

$$f\left(-\frac{1}{a}\right) = \frac{1}{f} \rightarrow -\frac{1}{ar}[-1] = \frac{1}{f} \rightarrow ar = f \rightarrow \begin{cases} a=r \times \\ a=-r \checkmark \end{cases}$$

$$b=1 \rightarrow b-a=r$$

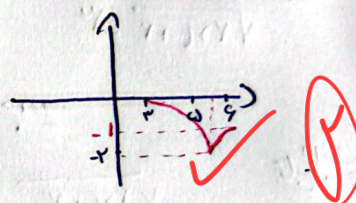
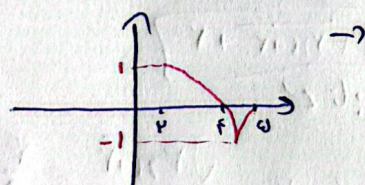
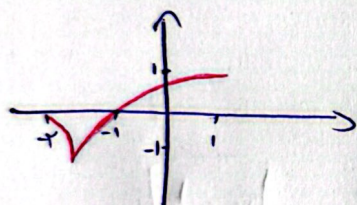
$$f(x) = \log_r x$$

$$\textcircled{1} \log_r^{x+r} \rightarrow \begin{matrix} (r) \\ (r) \end{matrix} -\log_r^{x+r} + r \rightarrow -\log_r^{-x+r} + r \checkmark \quad g(-1r) = -1 \quad g(-4r) = -r$$

$$g(-4r) = -\log_r^{-\frac{4r}{r}} \quad g(-1r) = -\log_r^{-\frac{(-1r)+r}{r}} = -\frac{1}{r} \quad -\frac{1}{r} + -\frac{4}{r} = -\frac{5}{r} \quad g(-1r) + g(-4r) = -\frac{5}{r}$$

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

$$f(x-1) = 1$$



$$f(x) = \left| \frac{x+1}{rx+1} \right| \rightarrow \left| \frac{(x-r)+1}{r(x-r)+1} \right|$$

$$\left| \frac{x-1}{rx-r} \right| + 1 + x < 0$$

$$x < -\sqrt{r} \quad \text{فاقد اشتراک}$$

$$\left(\frac{r}{r} \right)$$

$$\textcircled{1} \frac{x-1+rx-r+rx-rx}{rx-r} = \frac{rx^2-1}{rx-r}$$

$$\textcircled{2} \frac{1-x+rx-r+rx-rx}{rx-r} = \frac{rx^2-rx-r}{rx-r}$$

$$\begin{matrix} -\sqrt{r} & \sqrt{r} & \frac{r}{r} \\ - & + & - & + \end{matrix}$$

$$\begin{matrix} \frac{1-\sqrt{r}}{r} & \frac{r}{r} & \frac{1+\sqrt{r}}{r} \\ - & + & - & + \end{matrix}$$

$$f(x) = t$$

$$rx + t - t^r \geq 0$$

$$t^r - rx + t \leq 0$$

$$\begin{matrix} 0 & rx & \\ + & - & + \end{matrix}$$

$$(x-r)^3 + 1$$

کل عبارت $\rightarrow$ باید در $\frac{rv}{1}$ ضرب بشود برای اینکه صفر شود

$$0 \leq \frac{rv}{1} (x-r)^3 + rv \leq rx$$

$$\frac{rv}{1} (x-r)^3 + rv$$

عدد صحیح rv آوازه

$$0 \leq x \leq \frac{1}{r}$$