

$$\begin{aligned}
 1) \quad & \left. \begin{aligned} f(x) < 0 &\rightarrow x < -\varepsilon \\ f(x) > 0 &\rightarrow -\varepsilon < x < \varepsilon \\ f(x) < 0 &\rightarrow \varepsilon < x < \varepsilon - \{ \varepsilon \} \\ f(x) > 0 &\rightarrow x > \varepsilon \\ f(x) &\rightarrow \text{محدود نشود} \end{aligned} \right\} P_{f(x)}, (-\varepsilon, -r] \cup [0, r) \cup [r, +\infty)
 \end{aligned}$$

$$\begin{aligned}
 2) \quad & \text{الف) } f(x) = \frac{rx^r - rx + r}{x(x-r)(x+r)} \\
 & P_{f(x)}, R - \{0, \pm r\} \\
 & \rightarrow f(x) = \frac{rx^r - rx + r}{x(x-r)(x+r)} \xrightarrow{\Delta \rightarrow 0} \frac{-r}{-\frac{r}{\phi} + \frac{r}{\phi} - \frac{r}{\phi}} + \rightarrow P_{f(x)}, (-r, 0) \cup (r, +\infty)
 \end{aligned}$$

$$\begin{aligned}
 3) \quad & \text{الف) } f(x) = \frac{rx^r - rx + r}{x^2 - rx + r} \xrightarrow{\Delta \rightarrow 0} \frac{-r}{-\frac{r}{\phi} + \frac{r}{\phi} - \frac{r}{\phi}} + \rightarrow P_{f(x)}, (-r, +\infty) - \{r\} \\
 & \rightarrow f(x) = \frac{rx^r - rx + r}{x^2 - rx + r} \xrightarrow{\Delta \rightarrow 0} \frac{-r}{-\frac{r}{\phi} + \frac{r}{\phi} - \frac{r}{\phi}} + \rightarrow P_{f(x)}, (-r, +\infty) - \{r\} \\
 & \rightarrow f(x) = \frac{rx^r - rx + r}{x^2 - rx + r} \xrightarrow{\Delta \rightarrow 0} \frac{-r}{-\frac{r}{\phi} + \frac{r}{\phi} - \frac{r}{\phi}} + \rightarrow P_{f(x)}, (-r, +\infty) - \{r\}
 \end{aligned}$$

$$\begin{aligned}
 4) \quad & \text{الف) } x(x^r - 1) > 0 \\
 & \left. \begin{aligned} x > 0 \\ x < 1 \end{aligned} \right\} P_f, [1, +\infty) \\
 & \rightarrow |x - 1| - x^r \geq 0 \rightarrow -1 \leq x \leq 1 \\
 & |x| - 1 \neq 0 \rightarrow x \neq \pm 1
 \end{aligned}$$

محدود نشود

$$g_i \sqrt{(x-r)} [x-r] \xrightarrow[r^2]{\hookrightarrow [r, r^2]} (x-r) [x-r] \geq 0 \rightarrow \mathcal{P}_g, [r, +\infty)$$

$$\rightarrow \mathcal{I}(\sqrt{|x-1|} [x^{-1/2}]) \xrightarrow{\substack{\uparrow \\ \hookrightarrow [1/2, 1]}} |x-1| [x^{-1/2}] \geq 0 \rightarrow \mathcal{D}_f([1/2, +\infty))$$

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Sooko

[illegible]

[illegible]

$$\textcircled{N} \quad \frac{x^r + \mu_x + r}{x^r + \mu_x + r} \cdot \frac{x+1}{x-1} \quad x \neq 1, -1, -r \quad N^r \rightarrow x^r - q_x + q_{x+1} \rightarrow (x-r)^r \rightarrow x^r$$

$$\textcircled{a} \quad y = \log_x \log_{x+1} \log_x \frac{1}{x} \rightarrow x > 0, \quad x \neq 1$$

$$x+1 > 0 \rightarrow x > -1 \quad x \neq 0$$

$$\left. \begin{array}{l} \textcircled{b} \quad \textcircled{c} \quad \textcircled{d} \quad \textcircled{e} \quad \textcircled{f} \quad \textcircled{g} \quad \textcircled{h} \quad \textcircled{i} \quad \textcircled{j} \quad \textcircled{k} \quad \textcircled{l} \quad \textcircled{m} \quad \textcircled{n} \quad \textcircled{o} \quad \textcircled{p} \quad \textcircled{q} \quad \textcircled{r} \quad \textcircled{s} \quad \textcircled{t} \quad \textcircled{u} \quad \textcircled{v} \quad \textcircled{w} \quad \textcircled{x} \quad \textcircled{y} \quad \textcircled{z} \end{array} \right\} \log_2(0, +\infty) - \{1\}$$

$$D_2 \left[-\frac{\sqrt{z}}{z} \right]$$