

نام و نام خانوادگی = سَکِلارموی

①

⑤

$$Pf = [-\sqrt{1}, -\sqrt{3}] U [\sqrt{1}, \sqrt{1}] \text{ (نقطه)}$$

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(F)

$$\int x^{r+r_n+1} dx \rightarrow x^{r+r_n+r} \quad (II) \rightarrow (x+1)(x+r)$$

$$\begin{array}{c} -2 \quad -1 \\ \hline + \quad | \quad - \quad | \quad + \end{array} \quad (II)$$

$$Df = (I) \cap (II) \rightarrow Df = [-r_2, -r] \cup [-1, 0]$$

$$Df = (-\infty, -1) \cup (1, +\infty)$$

$$r - |x| > 0 \rightarrow r > |x| \rightarrow -r < x < r \quad Df = (-r, r)$$

$$x - r \neq 1 \rightarrow x \neq r \quad Df = (r, \omega) - \{r\}$$

$$x + 1^* > 0 \rightarrow x > -1^* \quad (-1^*, +\infty)$$

$$x + 1 \neq 1 \rightarrow x \neq -1$$

$$(-\infty, -1) \cup (1, +\infty)$$

$$Df = \frac{1}{2}, (-3, -1) \cup (1, +\infty) - \{-2\}$$

الف) $y = \log \frac{x^2 - rx + r^2}{x-r} \rightarrow \frac{x^2 - rx + r^2}{x-r} > 0 \rightarrow \frac{(x-r)(x-1)}{x-r}$

$$\begin{array}{c|c|c} & 1 & r \\ \hline & - & + \\ \hline \end{array}$$
 $Df = (1, +\infty) - \{r\}$

ب) $y = \log \frac{x+r}{x-a}$

$\frac{x+r}{x-r} > 0$

$$\begin{array}{c|c|c} -r & r & \\ \hline + & - & + \\ \hline \end{array}$$

1, 1, 1, 0

$x+a > 0 \rightarrow x > -a$
 $x+a \neq 1 \rightarrow x \neq -r$
 $(-\infty, +\infty) - \{-r\}$
 $(-\infty, -r) \cup (r, +\infty)$
 $x-r \neq 0$
 $x \neq r$
 $Df = (-\infty, -r) \cup (r, +\infty) - \{-r\}$

الف) $y = \sqrt{r \cdot \log_r(x-r)}$

$r - \log_r(x-r) > 0 \rightarrow r > \log_r(x-r)$

$1 > x-r$

$x-r > 0 \rightarrow x > r$

$Df = (r, 1]$

$1 > x$

ب) $y = \log(r \log_r^x - 1)$ $x > 0$

$r \log_r^x - 1 > 0 \rightarrow r \log_r^x > 1 \rightarrow \log_r^x > \frac{1}{r} \rightarrow x > r^{\frac{1}{r}} \rightarrow x > \sqrt[r]{r}$
 $Df = (\sqrt[r]{r}, +\infty)$

الف) $y = \frac{r}{r^x + 1} \rightarrow r^x + 1 \neq 0 \rightarrow r^x \neq -1 \checkmark Df = \mathbb{R}$

ب) $y = \frac{r}{\frac{x}{r-1}} \rightarrow r^x - 1 \neq 0 \rightarrow r^x \neq 1 \rightarrow x \neq 0 \rightarrow Df = \mathbb{R} - \{0\}$

ج) $y = \frac{r}{r^{\frac{x}{r-1}}} \rightarrow r^{\frac{x}{r-1}} - r \neq 0 \rightarrow r^{\frac{x}{r-1}} \neq r \rightarrow x \neq \log_r r \rightarrow Df = \mathbb{R} - \{\log_r r\}$

د) $y = \frac{r}{\frac{x}{r-r}} \rightarrow r^{\frac{x}{r-r}} - r \neq 0 \rightarrow r^{\frac{x}{r-r}} \neq r \rightarrow x \neq \log_r r \rightarrow Df = \mathbb{R} - \{\log_r r\}$

الف) $y = (rx+1)! \rightarrow rx+1 \in \omega \rightarrow rx \in \omega-1 \rightarrow x \in \frac{\omega-1}{r}$
 $Df = \{x | x = \frac{k-1}{r}, k \in \omega\}$

ب) $y = \left(\frac{rx-r}{rx-a}\right)! \rightarrow \frac{rx-r}{rx-a} \in \omega$

1, 1, 1, 0

$rx-r = r\omega x - a\omega \rightarrow rx - r\omega x = r - a\omega$
 $x(r-r\omega) = r - a\omega$

$x = \frac{r-a\omega}{r-r\omega}$

$Df = \{x | x = \frac{r-a\omega}{r-r\omega}, k \in \omega\}$