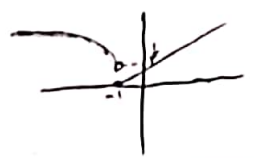


$$x = \begin{cases} x^2 - 1 & ; x \geq 0 \\ -x^2 & ; x < 0 \end{cases} \quad x = x^2 - 1 \leadsto x = \frac{x+1}{2}$$

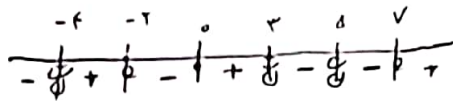
$$x = -x^2 \leadsto x = \pm \sqrt{-x}$$

if $x \geq 0 \leadsto x \geq -1$
if $x < 0 \leadsto x < -1$



عقود $-5-m, y > 1 \leadsto$

تابع است

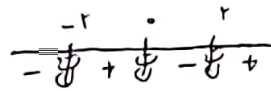
$$\frac{x f(m-r)}{f(m)} \geq 0$$


$$Df = (-f, -r] \cup [0, r) \cup [f, +\infty)$$

$Df : \rightarrow R$ - ریشه مربع $\leadsto x^2 - fm = 0$
 $x(x+r)(x-r) = 0$

$$Df = R - \{0, r, -r\}$$

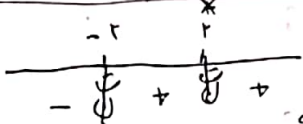
(الف -۳)

$$Df = \frac{x^2 - rx + r^2}{x^2 - fm} \geq 0$$


$$Df = (-r, 0) \cup (r, +\infty)$$

(ب)

$2x^2 - rx + r^2 \leadsto b^2 - 4ac = \Delta = -4 < 0$
 $\Delta < 0$
یعنی ریشه ندارد

$$\frac{x-r}{x^2 - rx^2 - 1} \geq 0$$


$x^2 = t \quad t^2 - 2t - 1 = 0$
 $(t-1)(t+2) = 0$
 $x^2 = 1, -2 \leadsto$ عقود

$$Df = (-r, +\infty) - \{r\}$$

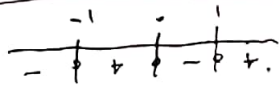
(الف -۴)

$$\frac{rx^2 + 1}{x - r[-m]}$$

$x - r[-m] \neq 0 \quad [-m] \neq r$
 $r[-m] \neq x \quad R - (-r < x \leq -r)$

$$Df = R - (-r, x]$$

(ب)

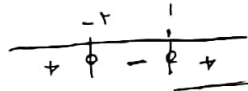
$$x(m^2 - 1) \geq 0$$


$\Sigma = [-1, 0] \cup [1, +\infty)$

$|m| + x \geq 0 \quad m > 0 \rightarrow x \geq 0 \rightarrow x \geq 0 \leadsto I \leadsto x > 0 \quad Df = \Sigma \cap I = [1, +\infty)$
 $x < 0 \leadsto 0$

(الف -۵)

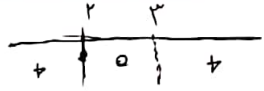
$|m-r| - m^2 \geq 0 \quad m > r \leadsto -x^2 + m - r \geq 0 \leadsto \Delta < 0$
ریشه ندارد
جواب نیز ندارد
 $-x^2 + m + r \leq 0$
 $x < r \leadsto -x^2 - m + r \geq 0$
 $x^2 + m - r \leq 0$
 $(x+r)(x-1) \leq 0$



$\Sigma = [-r, 1]$

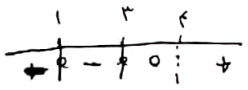
$$Df = \Sigma \cap I = [-r, 1) - \{-1\}$$

(ب)

$$(m-r)[m-r] \geq 0$$


$$Df = R$$

(الف -۶)

$$|m-1|[x-r] \geq 0$$


$$Df = \{1\} \cup [r, +\infty)$$

(ب)

$$||x-r|-1|-k=0 \Rightarrow ||x-r|-1|=k \Rightarrow |x-r|-1=k$$

$$\hookrightarrow |x-r|-1=-k$$

$$|x-r|=k+1 \rightarrow x-r=k+1 \rightarrow x=k+r$$

$$\hookrightarrow x-r=-k-1 \rightarrow x=-k+1$$

$$|x-r|=-k+1 \rightarrow x-r=-k+1 \rightarrow x=-k+r$$

$$\hookrightarrow x-r=k-1 \rightarrow x=k+1$$

$$\left. \begin{array}{l} x=r \\ x=r \\ x=0 \end{array} \right\} \sim \boxed{k=1}$$

$$x \neq ? \Rightarrow \frac{n+1}{n-1} \neq 0 \Rightarrow n \neq \pm 1$$

$$\left. \begin{array}{l} x^2 + 3x + 4 \neq 0 \\ (x+r)(n+1) \neq 0 \end{array} \right\} n=r$$

$$x^2 - 4x + 9 = 0$$

$$(x-r)^2 = 0$$

$$\boxed{x=r}$$

یک عدد صحیح دارد

$$\log \log \frac{1}{n+1}$$

$$I \sim x > 0, x \neq 1$$

$$II \sim x+1 > 0, x+1 \neq 1 \Rightarrow x > -1, x \neq 0$$

$$III \sim \log \frac{1}{x} > 0 \Rightarrow \frac{1}{x} > 1 \Rightarrow 0 < x < 1$$

$$\left\{ \begin{array}{l} I \cap II \cap III = \\ DF = (0, 1) \end{array} \right.$$

$$Df(m) = [-\frac{1}{r}, \frac{1}{r}] \Rightarrow -\frac{1}{r} \leq x \leq \frac{1}{r}$$

$$Df(xm^2-1) = ? \Rightarrow -\frac{1}{r} \leq x \leq \frac{1}{r}$$

$$\boxed{-\frac{\sqrt{r}}{r} \leq x \leq \frac{\sqrt{r}}{r}}$$