

$$\begin{aligned} (-2a=1) &\rightarrow q-2a=1 & a=1 \\ (-9a=0) &\rightarrow -9+9a=0 & C=9 \end{aligned}$$

$$b = -\varepsilon a \rightarrow y = \sqrt{-\varepsilon a^2 + a + \varepsilon}$$

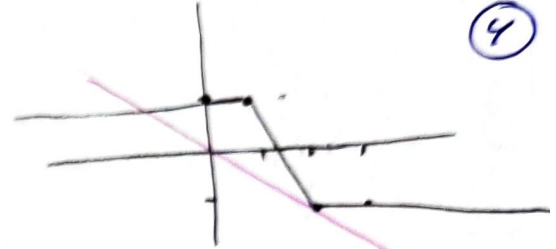
$$b = -\varepsilon \quad R_g = [2, +\infty)$$

$$\begin{cases} -\frac{b}{2a} = -\frac{1}{-2} = \frac{1}{2} \\ \rightarrow -\varepsilon\left(\frac{1}{9\varepsilon}\right) + \frac{1}{2} + \varepsilon \Rightarrow \frac{4\varepsilon}{14} \end{cases}$$

$$R_f = \sqrt{(-\infty, \frac{4\varepsilon}{14})} \Rightarrow R_f = [0, \frac{\sqrt{4\varepsilon}}{\varepsilon}]$$

$$|a-r| - |a-1| = k \quad \xrightarrow{\text{مجموع بردار}} \begin{array}{c|c|c|c} 0 & 1 & 2 & 3 \\ \hline 1 & 1 & -1 & -1 \end{array}$$

(2)



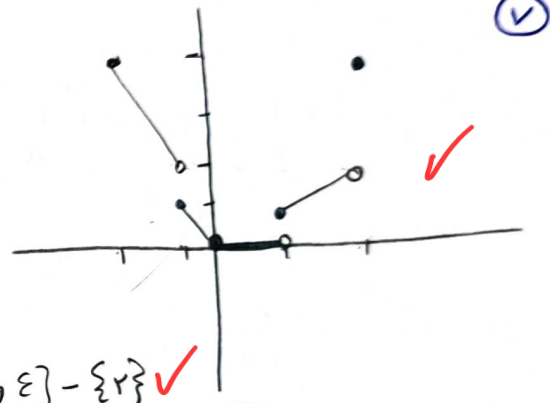
در این حالت این جدولی باشد 2 جواب داریم پس $y=k$ باید از حلقه 1-2 بگذرد

$$-1 < rk \quad \boxed{k = -\frac{1}{r}}$$

$$y = a[a]$$

$-2a$	$-2 \leq a < -1$	$-\frac{2}{\varepsilon}$	$-\frac{1}{2}$
$-a$	$-1 \leq a < 0$	$-\frac{1}{\varepsilon}$	0
0	$0 \leq a < 1$	0	1
a	$1 \leq a < 2$	$\frac{1}{\varepsilon}$	$\frac{2}{\varepsilon}$
$2a$	$a=2$	$\frac{2}{\varepsilon}$	$\frac{2}{\varepsilon}$

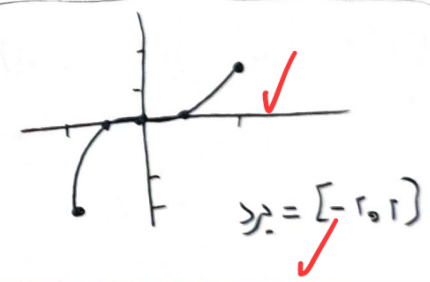
(2)



$$y \in [0, \varepsilon] - \{r\}$$

$$y = a|a| - a$$

$$\begin{cases} a^2 - a & a \geq 0 \rightarrow \begin{array}{c|c|c} 0 & 1 & 2 \\ \hline 0 & 0 & 2 \end{array} \\ -a^2 - a & a < 0 \rightarrow \begin{array}{c|c|c} -2 & -1 & 0 \\ \hline -2 & 0 & 0 \end{array} \end{cases}$$



$$y \in [-2, 1]$$

$$y = \frac{1}{a} + \frac{1}{a+1} + \frac{1}{a^2+a} \times \frac{a(a+1)}{a^2+a} \rightarrow \frac{a+1+a+1}{a(a+1)} \rightarrow y = 2a+2$$

$$y = \frac{2}{a}$$

$$f(-1) \rightarrow -2+2 \rightarrow 0$$

$$f(0) \rightarrow 0+2 \rightarrow 2$$

$$R_f = \mathbb{R} - \{0, -r\}$$

$$y = \frac{a - \varepsilon\sqrt{a} + 2}{a - 2\sqrt{a} + 1} \rightarrow y = \frac{(\sqrt{a}-1)(\sqrt{a}-2)}{(\sqrt{a}-1)(\sqrt{a}-1)} \Rightarrow y = \frac{\sqrt{a}-2}{\sqrt{a}-1}$$

(1/2)

(2)

$$y\sqrt{a} - y = \sqrt{a} - 2 \quad \sqrt{a}(y-1) = y-2 \quad \sqrt{a} = \frac{y-2}{y-1} \Rightarrow a = \frac{(y-2)^2}{(y-1)^2} \rightarrow R_f = \mathbb{R} - \{1\}$$

$$R_f = (-\infty, 1) \cup [2, +\infty)$$

$$y = \frac{a^r + r a^r - a - r}{a^r - 1} \rightarrow \begin{array}{r} a^r + r a^r - a - r \quad \overline{) a - 1} \\ - a^r + a^r \\ \hline r a^r - a - r \\ - r a^r + r a \\ \hline r a - r \\ - r a + r \\ \hline 0 \end{array}$$

$$\rightarrow \frac{(a+1)(a+r)(a-1)}{(a-1)(a+1)}$$

$$y = a + r \quad \frac{19-1 \text{ qab } 1015}{=1} \quad \left. \begin{array}{l} f(1) = r \\ f(-1) = 1 \end{array} \right\} r+1 = \boxed{8}$$

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