

$$\frac{1}{x-1} = |x-1| \rightarrow \frac{1}{x-1} = 1-x \quad \left| \frac{1}{x-1} = x-1 \right.$$

$$-(x-1)^2 = 1 \quad (x-1)^2 = 1 \rightarrow x = 2$$

$$(x-1)^2 = 1 \rightarrow \text{مقدار}$$

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$$\boxed{x = 2}$$

①

$$a) \left| \frac{x-1}{x} \right| < 2 \rightarrow -2 < \frac{x-1}{x} < 2$$

$$-2x < x-1 \rightarrow 1 < 3x \rightarrow \frac{1}{3} < x$$

$$x-1 < 2x \rightarrow \text{حداقل مقدار}$$

$$x \neq 0 \rightarrow \text{مقدار} \Rightarrow \left(\frac{1}{3} + \infty \right)$$

$$b) \left| \frac{x-2}{x+1} \right| > 1$$

$$\frac{x-2}{x+1} > 1 \rightarrow \frac{x-2-x-1}{x+1} > 0 \Rightarrow \frac{-x-3}{x+1}$$

$$\frac{x-2}{x+1} < -1 \rightarrow \frac{x-2+x+1}{x+1} = \frac{2x-1}{x+1} < 0$$

$$\Rightarrow \left(-\frac{1}{2}, \frac{1}{2} \right) \cup (-3, -\frac{1}{2})$$

②

$$x < |x+4| \rightarrow x+4 > x \rightarrow x^2 - x - 4 < 0 \rightarrow (x-5)(x+2) > 0$$

$$+x+4 < -x \rightarrow x^2 + x + 4 < 0 \rightarrow \Delta < 0 \rightarrow \text{مقدار}$$

$$-B < x-a < B$$

$$-B+a < x < B+a \quad -2 < x < 3 \rightarrow \frac{-B+a}{2a} = 1 \rightarrow a = \frac{1}{2}$$

③

$$y = |x+1| - |2x| + |x-2|$$

x	y
-1	1
0	1
2	-1

max = 1, min = -1

④

$$y = \left| \frac{x}{2} \right| - 2 \xrightarrow{\text{مقدار}} \left| \frac{x+2}{2} \right| - 2 \xrightarrow{\text{مقدار}} \left| \frac{x}{2} \right| - 1$$

$$\left| \frac{x+2}{2} \right| - 1 = \left| \frac{x}{2} \right| - 2 \rightarrow \left| \frac{x}{2} \right| = \left| \frac{x+2}{2} \right| + 1 \rightarrow |x| = |x+2| + 2$$

$$x \rightarrow x = x+2 \rightarrow 0 = 2 \text{ مقدار}$$

$$x < -2 \rightarrow -x = -x-2-2 \rightarrow 0 = -4 \text{ مقدار}$$

$$-2 < x < 0 \rightarrow -x = x+2+2 \rightarrow x = -4$$

$$\boxed{x = -4}$$

⑤

$$\begin{array}{c|c|c} -\Sigma & & 1 \\ \hline 1-x+x+\Sigma & 1-x-x-\Sigma & x-1-x-x \\ \Delta & \underline{-1-x-\Sigma} & -\Delta \end{array}$$

$$\rightarrow f(m) = \frac{1}{n} - \left[\frac{n+1}{n} \right] \rightarrow \frac{1}{n} - \left[1 + \frac{1}{n} \right] \rightarrow \frac{1}{n} - 1 - \left[\frac{1}{n} \right] \rightarrow \frac{1}{n} - \left[\frac{1}{n} \right] - 1 \rightarrow$$

$$\underline{R_f = [-1 \quad \cdot)}]$$

$$y = x - 1 \left[\frac{x}{2} \right]$$

$-r \langle u \rangle \rightarrow y = x + r$
 $\bullet \text{ } 18 \langle u \rangle r \rightarrow y = x$

- $\forall x \in \mathbb{R} \rightarrow y = x$

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$$-1 \cdot x - y = 0$$

④

$$\left. \begin{array}{l} a + [b] = 5,2 \rightarrow 0,1 + \square = 5,2 \rightarrow 0 + \square = 5 \\ \underline{b} - [a] = 1,4 \quad \square,1 + 0 = 4,2 \quad -0 + \square = 4 \end{array} \right\} \begin{array}{l} \square = 5 \quad 0 = 1 \\ a = 1,1 \quad b = 4,2 \end{array} \right\} \text{1.}^{\circ}$$

$$[b] = (b - \frac{1}{2}) \quad [a] = (a - \frac{1}{2})$$

$$\left. \begin{aligned} a + (b - 1, \varepsilon) &= r, \gamma \rightarrow a + b \leq r, \gamma \\ b - (a - 1, \gamma) &= r, \varepsilon \rightarrow b - a \leq r, \varepsilon \end{aligned} \right\} \left. \begin{aligned} q, \beta &= r, b \rightarrow b \leq r, \varepsilon \\ a &\leq 1, \gamma \end{aligned} \right\} \frac{r}{\gamma} \text{ ok}$$

$$\sqrt{(1+\sqrt{r})^4 + (1-\sqrt{r})^4} = 191$$

$$(1 + \sqrt{r})^4 = 191 - (1 - \sqrt{r})^4$$

$$[(1+\sqrt{r})^9] = \left[\frac{141}{14V} \right] \Rightarrow [(1+\sqrt{r})^9] = 14V$$