

$$(x-1)^p = 1 \rightarrow x^p - px + 1 = 1 \rightarrow x^p - px = 0 \quad x \rightarrow 0 \text{ قیوے} \quad \boxed{x=1} \checkmark$$

شرط: $x > 1$

$$\text{الف) } -p < \frac{px-1}{x} < p \rightarrow \frac{px-1}{x} < p \rightarrow \frac{1}{x} > 0 \rightarrow x \in (0, +\infty) \quad (1)$$

$$-p < \frac{px-1}{x} \rightarrow \frac{px-1}{x} > 0 \rightarrow x \in \mathbb{R} - [0, \frac{1}{p}]$$

$$\cap \rightarrow \left(\frac{1}{p}, +\infty\right)$$

$$\text{ب) } \frac{x-p}{px+1} > 1 \rightarrow \frac{x+p}{px+1} < 0 \quad \frac{-p}{+} \mid \frac{-1}{-} \mid \frac{+}{+} \rightarrow x \in (-p, -\frac{1}{p})$$

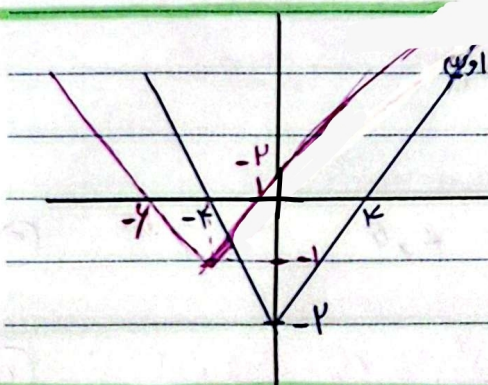
$$\frac{x-p}{px+1} < -1 \rightarrow \frac{-\frac{1}{p}}{+} \mid \frac{\frac{1}{p}}{-} \mid \frac{+}{+} \rightarrow x \in (-\frac{1}{p}, \frac{1}{p})$$

$$\cup \rightarrow (-p, \frac{1}{p}) - \{-\frac{1}{p}\}$$

$$x+4 > x^p \rightarrow (x-3)(x+2) < 0 \quad \frac{x}{p} \mid \frac{-2}{+} \mid \frac{3}{+} \rightarrow (-2, 3) \quad (2)$$

$$x+4 < -x^p \rightarrow \text{ابطاعی جواب برقرار نیست}$$

$$-2 < x < 3 \rightarrow |x - \frac{1}{p}| < \frac{5}{p} \rightarrow x = \frac{1}{p} \quad (5)$$



$$|\frac{1}{p}x| - p = |\frac{1}{p}x + p| - 1 \quad (3)$$

$$|\frac{1}{p}x| - |\frac{1}{p}x + p| = 1 \xrightarrow{p} |x+p| = -px - 5$$

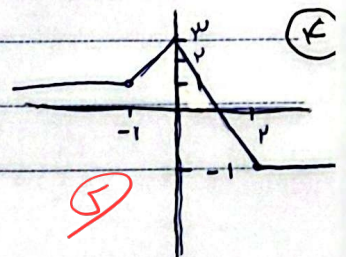
$$x \rightarrow -p \checkmark$$

$$\text{Max} \rightarrow x=0 \rightarrow y=p$$

$$\text{Min} \rightarrow x=p \rightarrow y=-1$$

$$\rightarrow p-1=p$$

	-1	0	p
1	$px+p$	$px+p$	-1



الف) $R_f = \{-\omega, -\tau, \dots, \tau, \omega\}$ (4)

ب) $f(x) = \frac{1}{x} - \left[1 + \frac{1}{x}\right] \rightarrow f(x) = \frac{1}{x} - \left[\frac{1}{x}\right] - 1 \rightarrow -1 < R_{f(x)} < 0$

$-1 < x < -\frac{1}{p} \rightarrow y = 0$

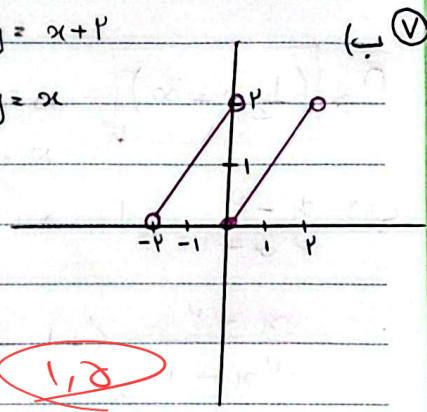
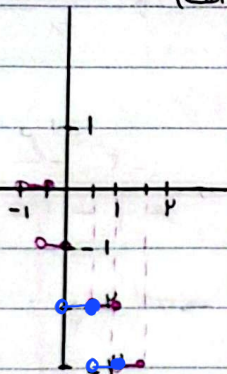
$-\frac{1}{p} < x < 0 \rightarrow y = -1$

$0 < x < \frac{1}{p} \rightarrow y = -p$

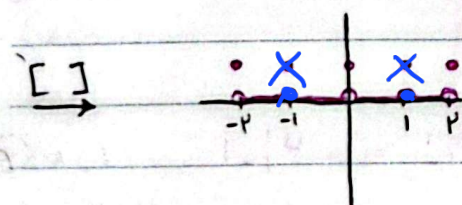
$\frac{1}{p} < x < 1 \rightarrow y = -p^2$

(الف) $-p < x < 0 \rightarrow y = x + p$

$0 < x < p \rightarrow y = x$



$y = |x| - 1$ $y = ||x| - 1|$



(الف) $x^p - px$

$x = -1 \rightarrow y = p$

$x = p \rightarrow y = 0$

(ب) ①

$a = p, k \quad \alpha = 1/p \quad a + b = 1/p + p/k = k, 4$ (5) (9)

$(1+\sqrt{p})^4 + (1-\sqrt{p})^4 = 1911 \rightarrow 0 < \sqrt{p} - 1 < 1 \rightarrow 0 < (\sqrt{p} - 1)^4 < 1$ (10)

$(1+\sqrt{p})^4 = 1911 - (1-\sqrt{p})^4 \rightarrow 1911 < (1+\sqrt{p})^4 < 1911$

$\Rightarrow [(1+\sqrt{p})^4] = 1911$ (5)