

19, 25

نسبیه

$$\frac{1}{x-1} = |x-1|$$

$$\frac{1}{x-1} = x-1 \Rightarrow x^2 - 2x + 1 = 1$$

(2) -1

$$x^2 - 2x + 1 = 1$$

$$x^2 - 2x = 0 \Rightarrow x(x-2) = 0$$

$$x > 1$$

$$x = 0 \Rightarrow \text{غلط}$$

$$\frac{1}{x-1} = -x+1 \Rightarrow -1 = x^2 - 2x + 1 \Rightarrow x^2 - 2x + 2 = 0$$

$$\Delta = -4 \Rightarrow \text{ریشه حقیقی ندارد}$$

ایست

(الف) $\left| \frac{2x-1}{x} \right| < 2 \Rightarrow |2x-1| < |2x|$

2

(1, 1.5)

$$2x^2 - 2x + 1 < 2x^2 \Rightarrow \frac{1}{2} < x$$

(ب) $\left| \frac{x-2}{2x+1} \right| > 1 \Rightarrow |x-2| > |2x+1|$

$$x^2 - 2x + 1 > 4x^2 + 4x + 1$$

$$3x^2 + 6x < 0$$

$$\frac{-2}{3} < x < 0$$

$$\left[-\frac{2}{3} < x < 0 \right] - \left\{ -\frac{1}{2} \right\}$$

$$x^2 - x - 4 < 0$$

$$\frac{-2}{3} < x < 0$$

2

$$(x-3)(x-2) < 0 \Rightarrow -2 < x < 3 \quad (1)$$

(2)

$$x > -5$$

$$x^2 + x + 4 < 0 \Rightarrow x < -5$$

Δ < 0
حل
مستحيل

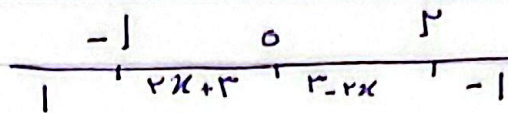
$$(1) \cup (2) \Rightarrow \left| x - \frac{3+2}{2} \right| < \frac{3-2}{2}$$

$$\left| x - \frac{5}{2} \right| < \frac{1}{2}$$

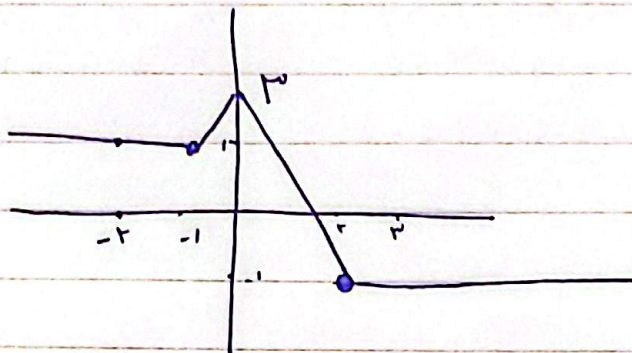
$$\alpha = \frac{1}{2}$$

dn

y:



(2)



$$\left. \begin{array}{l} y_{\max} = 2 \\ y_{\min} = 1 \end{array} \right\} \Rightarrow 2 - 1 = 1 \quad \checkmark$$

$$y = \left| \frac{1}{2}x \right| - 2 \Rightarrow \left| \frac{1}{2}(x+4) \right| - 2 \Rightarrow$$

(2)

$$\left| \frac{1}{2}(x+4) \right| - 2 + 1 = \left| \frac{1}{2}(x+4) \right| - 1$$

$$x = x+4 \Rightarrow \emptyset$$

$$y = y' \Rightarrow \left| \frac{1}{2}x \right| - 2 = \left| \frac{1}{2}x + 2 \right| - 1$$

$$-x = x+4$$

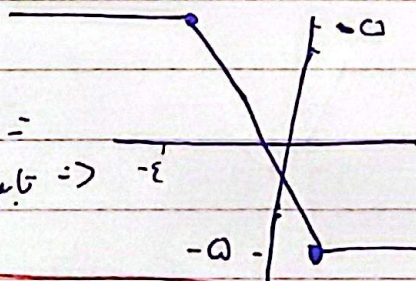
$$|x| - 1 = |x+4| - 2$$

$$\boxed{x = -3}$$

$$-x = -x-4 \Rightarrow \emptyset$$

$$|x| = |x+4| + 1$$

$$\boxed{x = -3} \quad \checkmark$$



$$\text{الف) } f(x) =$$

تابع زوجی

$$R = [-a, a] \Rightarrow$$

$$R = \{-a, -1, \dots, 1, a\} \quad \checkmark$$

$$\text{ب) } \frac{1}{x} \in \left[\frac{x+1}{x} \right] = -1 + \frac{1}{x} \in \left[\frac{1}{x} \right] \Rightarrow$$

$$\boxed{R = [-1, 1]} \quad \checkmark$$

$$R = [-1, 0)$$

(الف)

$$-1 < x \leq -\frac{1}{2}, a$$

$$-\frac{1}{r} < x \leq 0$$

$$0 < x \leq \frac{1}{2}$$

$$\frac{1}{x}$$

$$1,5 - 2x < 2$$

$$0.5 - 1.21 < 1$$

-15. ~~11~~ 50

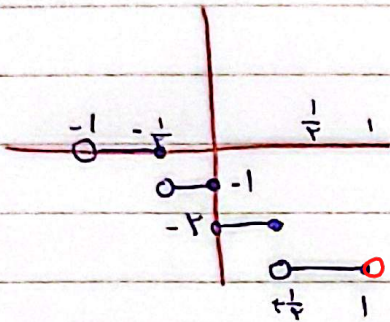
$$-r < -r_n < -1$$

$$[-rx] \cdot 1 = 0$$

$$\Rightarrow \quad " \quad " \quad = -1$$

11 11 11 11 11

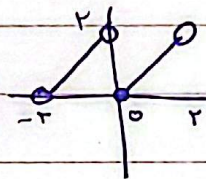
$$11 \ 11 = -3$$



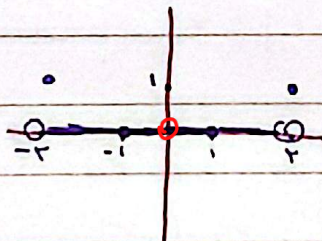
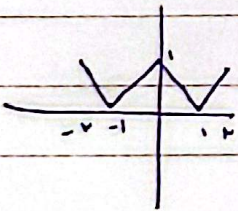
2)

$$-r < x \leq 0 \Rightarrow x+r$$

$$\sigma, \tau, \chi \in \tau \Rightarrow \chi$$



(الف) $[|x| - 1]$

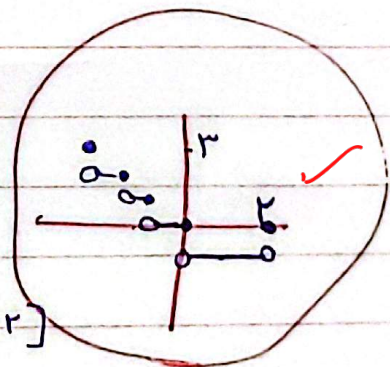
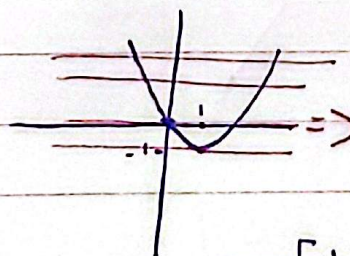


$$[-r, r]$$

②

→ $[x^r + x]$

$$x^r - rx =$$



$$a + [b] = \{, 2$$

$$b - [a] = 2, \{$$

-1

(2)

$$a + b + [b] - [a] = 4, 4 \quad b - [a] = 2, \{$$

$$a + [b] = \{, 2 \Rightarrow \text{بزرگترین} = 2, 2$$

$$a + b + b - 2, \{ - a + 2, \{ = 4, 4$$

$$a + b - 2, \{ = \{, 2$$

$$a + b = \{, 4$$



فردین مربع

$$(1 + \sqrt{2})^4 + (1 - \sqrt{2})^4 = (1 + \sqrt{2})^4 + (1 + \sqrt{2})^{-4} = 191$$

-10

(2)

$$(1 + \sqrt{2})^4 = t$$

$$t + \frac{1}{t} = 191$$

$$t^2 + -191t + 1 = 0$$

$$[t^2 + -191t + 1] = 0$$

$$[191, \dots] \Rightarrow$$

$$[0, 0, \dots]$$

$$X^0$$

$$[t] = -191$$

$$[(1 + \sqrt{2})^4] = 191 \checkmark$$