

دوازدهم پیر

تکلیف

۲۰ آفرین!

بنام خدا

سازمان نژادپرور

۱- (۵)

فرضات $f(n) = an + b \Rightarrow f(n+1) + f(n+c) = 2n + f(c)$

$$\Rightarrow a(n+1) + b + a(n+c) + b = 2n + ca + b$$

$$\Rightarrow 2an + 2a + 2b = 2n + ca + b \Rightarrow b = n(1-a)$$

چون b عدد ثابت است پس به n وابسته نیست پس ضرب a برابر است

$$1-a=0 \Rightarrow \boxed{a=1} \quad \Rightarrow f(n)=n$$

$$\Rightarrow \boxed{b=0}$$

$$y = \sqrt{f(n) - n^c} = \sqrt{n - n^c}$$

$$\Rightarrow y = n - n^c \Rightarrow y_{\max} = \frac{1}{4} \Rightarrow n - n^c \leq \frac{1}{4} \Rightarrow \sqrt{n - n^c} \leq \frac{1}{2}$$

$$n > \frac{1}{c}$$

$$\Rightarrow Rf, [0, \frac{1}{4}]$$

$$f(n) = \frac{n^2 - \varepsilon n}{n + c} = \frac{n(n-c)/n-c}{n+c} = \frac{n^2 - \varepsilon n}{n+c}$$

$$y = n^2 - \varepsilon n \Rightarrow y_{\min} = -1 \Rightarrow Rf = [-1, +\infty), n - \varepsilon n \neq +1$$

$$n > +1$$

$$I, II \Rightarrow Df = R - n^2, \varepsilon$$

$$\Rightarrow f\left(\frac{a+b}{2}\right), f\left(\frac{r}{-r}\right) = f(-1), 1, \varepsilon = n$$

$$Rf, [-1, +\infty) - \{1\}$$

$$\sqrt[n]{x^r + ax + b} - 1 \sim \sqrt[n]{(n-r)^r} = (n-r)$$

(2) r

$$(n-r)^r = n^r - rn^{r-1} + \dots + 1 \Rightarrow \begin{cases} a = -r \\ b = +1 \end{cases}$$

$$Df \in [-r, 1] \Rightarrow -r \leq n \leq 1 \Rightarrow -1 \leq n - r \leq 1$$

$$\Rightarrow Rf \in [-1, 1] \checkmark$$

$$y_1 = \left(\frac{n+1}{1-n} \right)^{\frac{1}{r}} \Rightarrow \frac{n+1}{1-n} > 0 \quad \frac{1}{1-n} \quad - \infty$$

(2)

$$\Rightarrow Df \in (-1, 1)$$

$$y_r = \frac{an^r - 1}{n^r + b} \Rightarrow n^r = \frac{-by_r - 1}{y_r - a} \geq 0$$

$$\frac{-\frac{1}{b}a}{-\frac{1}{b} + \frac{1}{a}}$$

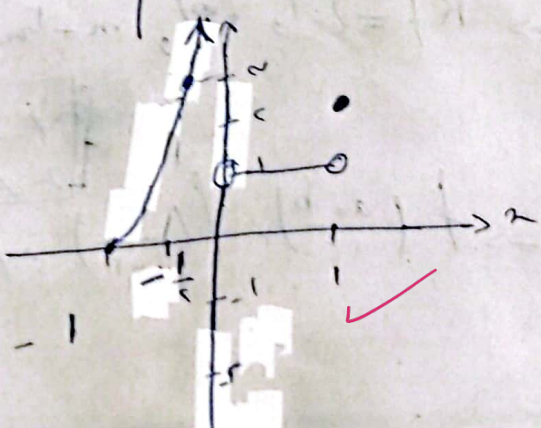
$$b > 0$$

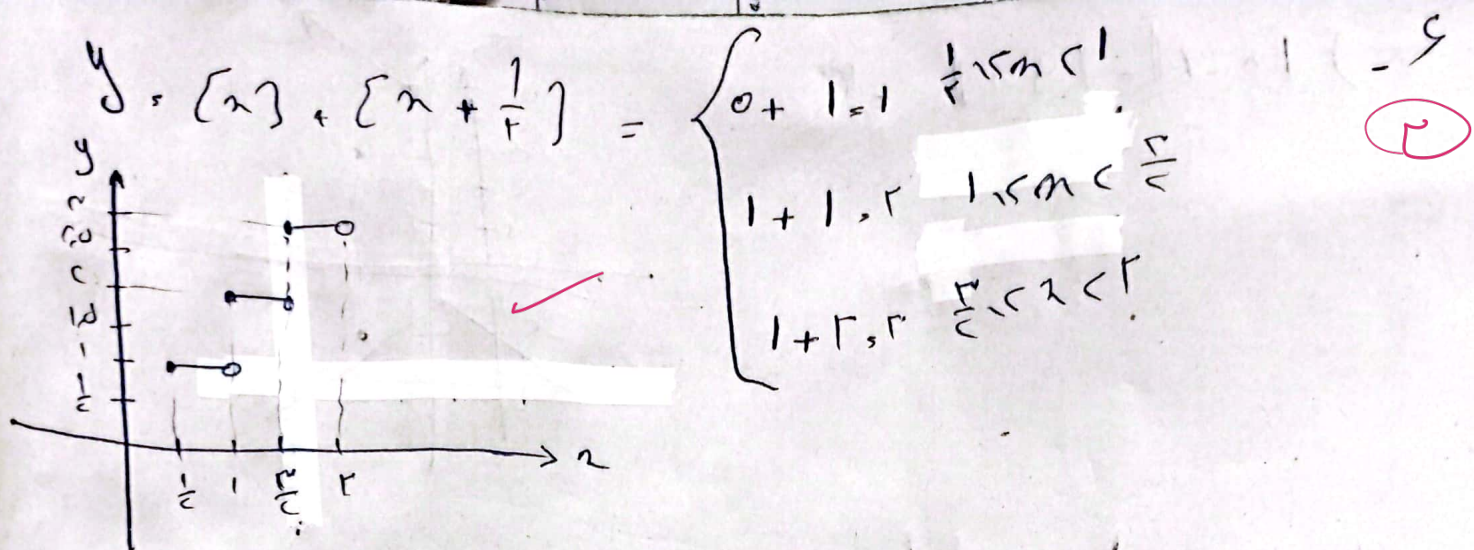
$$\Rightarrow a = +1 \Rightarrow \boxed{a + b \geq +r} \checkmark$$

المسألة - 1: صواب أو خطأ؟ $Rf \in [-1, 1]$

$$\frac{\lfloor 23 \rfloor + \lfloor 12 \rfloor}{2} = \begin{cases} \frac{-1}{2} - 1 & -1 \leq x < 0 \\ 0 + 1 & 0 \leq x < 1 \\ 1 + 1 & x = 1 \end{cases}$$

(2)





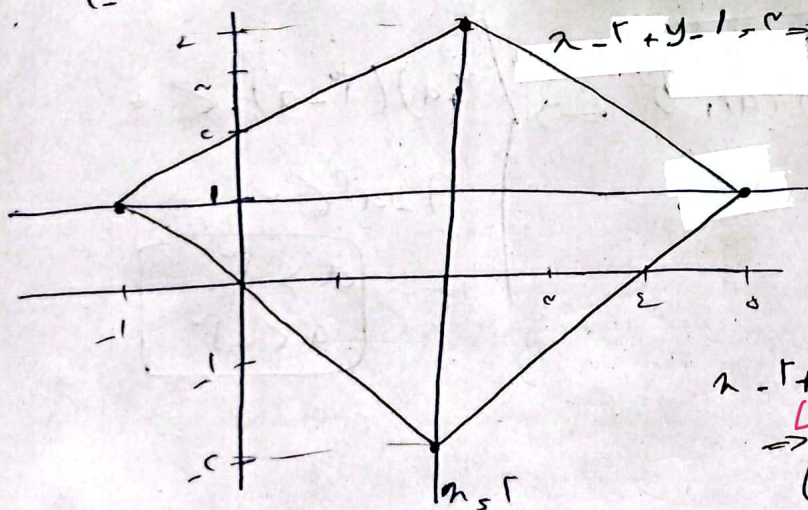
$y = \left| \frac{x+1}{ax+b} \right| < 1 \Rightarrow -1 < \frac{x+1}{ax+b} < 1$

$\Rightarrow Rf: (-1, 1) \Rightarrow \frac{b+1}{ab+r}, \frac{1}{a}$

$\begin{cases} \frac{1}{a} > 1, \frac{b+1}{ab+r} < -1 \Rightarrow [a, 1, b, -r] \Rightarrow a-b, r \\ \frac{1}{a} < -1, \frac{b+1}{ab+r} > 1 \Rightarrow [a, -1, b, r] \Rightarrow a-b, r \end{cases}$

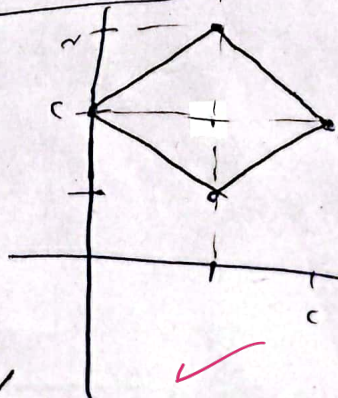
$r-x+y, r \Rightarrow y, x+r$

$x-r+y, r \Rightarrow y, x-r$



$r-x+1-y, r \Rightarrow y, x-1$

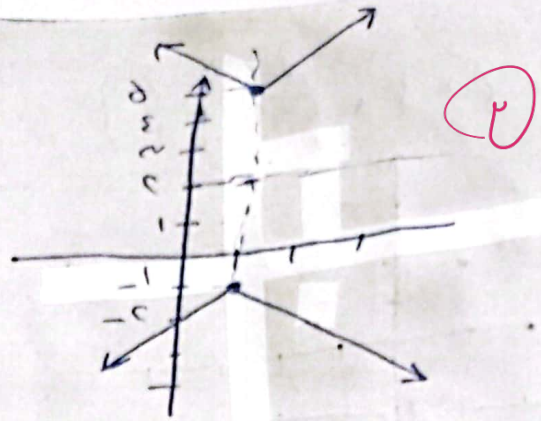
$x-r+1-y, r \Rightarrow y, x-r$



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

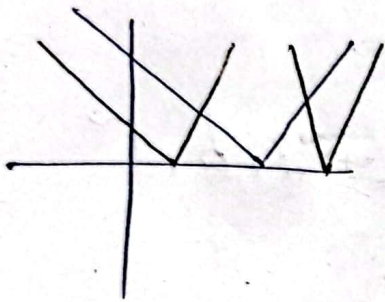
نقطه مرکزی (1, 1) است و پس مربع را به مرکز آن منتقل می‌کنیم

$$ب) |x-1| - |y+2| = -3$$



$$y = \pm x + |a+1|$$

صافتر کواچو م فرم $|a+1|$ پیکل عا دقت



برک آله بر دتاچو ذکر کنده. اگه اینه باید شیب یی

از شافها + وکی دله - باند پس دارنم :

$$-\frac{b}{a}$$

$$\begin{array}{l|l} x-a & x+a \\ \hline x-a-b & x+a-b \end{array}$$

$$x+a-b = x(a+1), b \Rightarrow (x+a)(x-a) < 0$$

$$a-a' < 0$$

$$\Rightarrow \boxed{\begin{array}{l} a > 3 \\ a < -3 \end{array}}$$