

دوازدهم رفته A

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کتاب شاه ۵

$$\Rightarrow f(n+1) + f(n+r) = r_n + f(r) \quad (1)$$

$$\Rightarrow r_{n+1} = r \Rightarrow r_n = r \Rightarrow n=1 \Rightarrow f(1) + f(1) = r + f(r)$$

$$\Rightarrow f(r) = r \Rightarrow y = u \Rightarrow \frac{y}{f(n)} \sim \text{تابع}$$

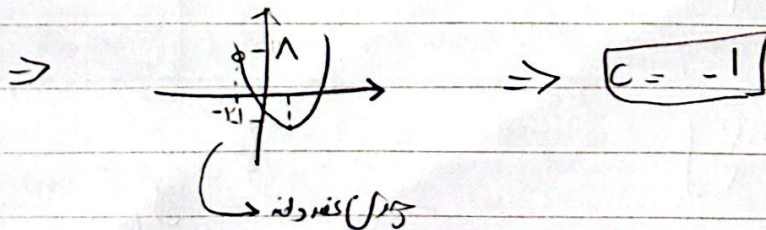
$$\Rightarrow y = \sqrt{f(x) - x^2} : R_f = ?$$

$$\text{حاصل } f(x) = x \Rightarrow y = \sqrt{x - x^2} \Rightarrow \max(x - x^2) = ?$$

$$R_f = \sqrt{[-\infty, \frac{1}{4}]} = [0, \frac{1}{4}] \quad x = -\frac{b}{2a} = \frac{1}{2} \Rightarrow \max : (\frac{1}{4} - \frac{1}{4}) = (\frac{1}{4})$$

$$f(n) = \frac{n^3 - r_n}{n+r} \Rightarrow D_f \Rightarrow n+r \neq 0 \Rightarrow n+r \Rightarrow D_f = R - \{1, b\} \quad (2)$$

$$\Rightarrow \text{برای تابع طبق} \Rightarrow [c, +\infty) \cdot \{1\} \Rightarrow \frac{n(n-r)(n+r)}{n+r} = n^2 - r_n$$



$$\Rightarrow a = b = -2 \quad c = -1 \Rightarrow f\left(\frac{a+b}{2c}\right) = f\left(\frac{-4}{-2}\right) = f(2) \Rightarrow$$

$$f(2) = \frac{2^3 - 4(2)}{2+2} = 0$$

$$y = \sqrt{x^3 + ax^2 + bx - 1} \Rightarrow D_y = [a, b] \Rightarrow \quad (3)$$

$$y = \sqrt{(x-4)^3} \Rightarrow \begin{cases} a = -4 \\ b = 12 \end{cases} \Rightarrow D = [-4, 12] \Rightarrow \text{تابع خفی}$$

• dot note $y = x - 2 \rightarrow \text{خفی} \Rightarrow x = -4 \rightarrow y = -6$
 $x = 12 \rightarrow y = 10 \Rightarrow$
 $R_y = [-1, 10]$

$$y_1 = \left(\frac{n+1}{1-n}\right)^{\frac{1}{2}} \Rightarrow \sqrt{\frac{n+1}{1-n}} \Rightarrow D_{y_1} = \mathbb{R} - \{1\}$$

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$$y_2 = \frac{ax^2-1}{x^2+b} \Rightarrow \mathbb{R}_{y_2} \Rightarrow \text{تسليم مقدار} \Rightarrow y_2 = a \Rightarrow y_2 = -\frac{1}{b}$$

در عبارت اعداد

$$\mathbb{R}_{y_2} = (-\infty, 1) \cup (1, +\infty) \Rightarrow a=1 \Rightarrow b=-1 \Rightarrow -\frac{1}{b}=1$$

$$a+b=1-1=0$$

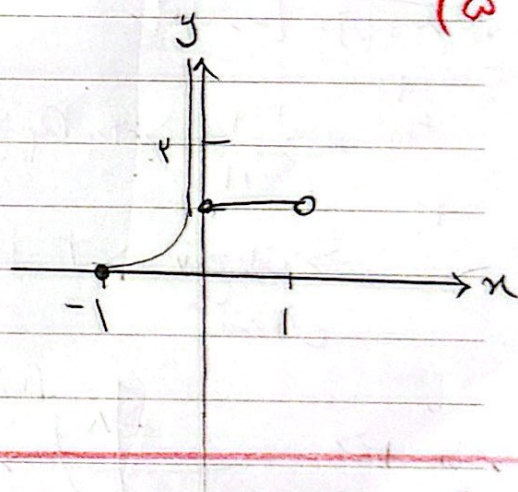
$$\frac{[x]}{x} + \frac{|x|}{x} = \frac{[x] + |x|}{x}$$

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$$-1 \leq x < 0 \Rightarrow [x] = -1 \Rightarrow y = \frac{-1-x}{x}$$

$$0 \leq x < 1 \Rightarrow [x] = 0 \Rightarrow y = \frac{x}{x} = 1$$

$$x = 1 \Rightarrow [x] = 1 \Rightarrow y = \frac{1+1}{1} = 2$$



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

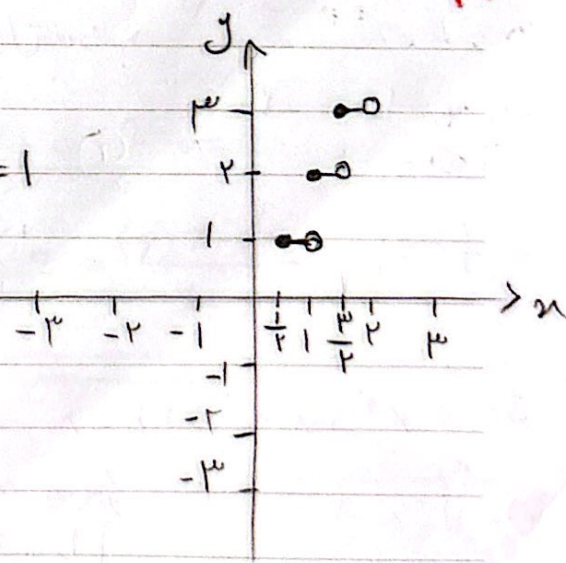
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$$\text{مثال: } \left[\frac{1}{x}, 2\right)$$

$$x < 1 \Rightarrow y = [x] + \left[x + \frac{1}{x}\right] = 0 + 1 = 1$$

$$1 \leq x < 2 \Rightarrow y = 1 + 1 = 2$$

$$x \geq 2 \Rightarrow y = 1 + 2 = 3$$



سپارده 10

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$$\left| \frac{x+1}{ax+3} \right| \rightarrow y=1 \text{ اوسط } D: (b, +\infty)$$

پایین تکرار

$$\Rightarrow a-b=?$$

$$\left| \frac{x+1}{ax+3} \right| < 1 \Rightarrow |x+1| < |ax+3|$$

$$|a| > 1 \rightarrow \text{اگر } a=1 \rightarrow \text{به مقدار اصلی می کشد} \Rightarrow a=-1 \Rightarrow f(x) = \left| \frac{x+1}{-x+3} \right| \Rightarrow$$

و پایین تر می رود

$$b=3 \rightarrow a-b = -1-3 = -4$$

$$|x-2| + |y-1| = 3 \quad \text{این تابع شش ضلعی مربع است و نقطه مرکز مربع } O = \begin{bmatrix} 2 \\ 1 \end{bmatrix} \text{ مرکز مربع}$$

$$\text{قطر مربع} = 6$$

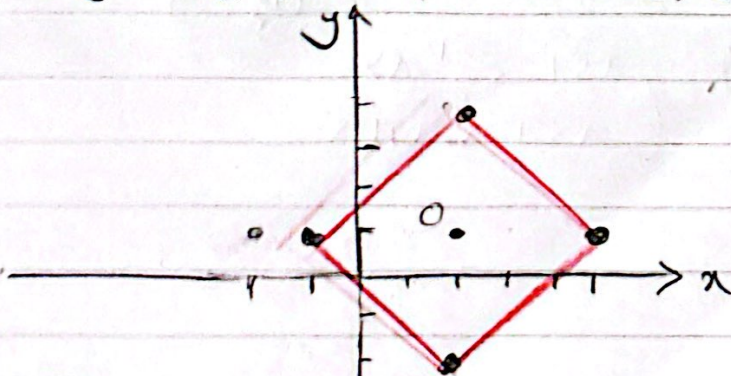
$$\left. \begin{array}{l} x \geq 2 \\ y \geq 1 \end{array} \right\} \Rightarrow x-2+y-1=3 \Rightarrow x+y-3=3 \Rightarrow x+y-6=0$$

$$(x, y) = (2, 4)$$

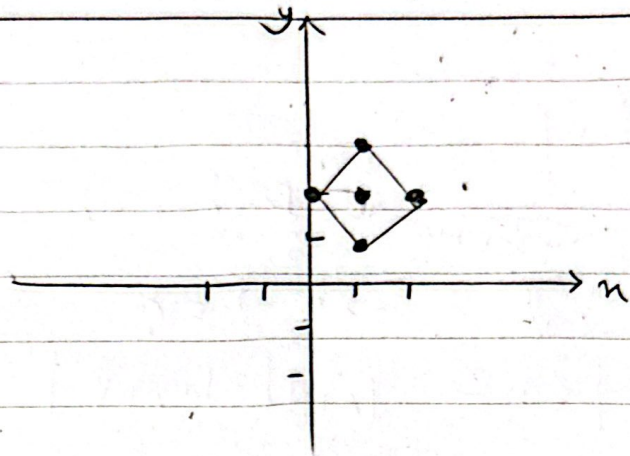
$$\left. \begin{array}{l} x \geq 2 \\ y < 1 \end{array} \right\} \Rightarrow -y+1+x-2=3 \Rightarrow (x, y) = (5, 1)$$

$$\left. \begin{array}{l} x < 2 \\ y \geq 1 \end{array} \right\} \Rightarrow y-1-x+2=3 \Rightarrow (x, y) = (-2, 4)$$

$$\left. \begin{array}{l} x < 2 \\ y < 1 \end{array} \right\} \Rightarrow y = -y+1-x+2=3 \Rightarrow (x, y) = (-1, 1)$$

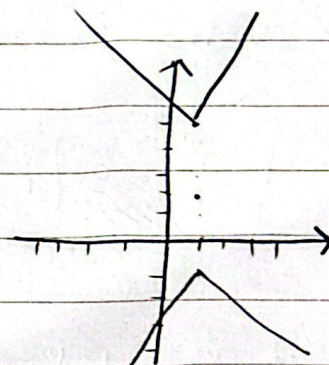


الف) $|x-1| + |y-2| = 1$



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ب) $|x-1| - |y-2| = -2 \Rightarrow |y-2| - |x-1| = 2$



$$y = \begin{cases} r_m + a + b = (a + r)m + b & a + b > 0 \\ r_m - (a + b) = (r - a)m - b & a + b < 0 \end{cases} \Rightarrow (a + r)(r - a) < 0$$

① $a > -r, a >$

$\downarrow$
 $a > r$

② $a < -r$
 $\Leftrightarrow \begin{cases} a < r \leq r - a > 0 \\ a < -r \Leftrightarrow a + r < 0 \end{cases}$