

Subject:

Date:

$$x=1 \rightarrow f(x) = x + f(x) \rightarrow f(x) = x$$

-1

$$f(x+1) + f(x+2) = x + x \rightarrow \text{مطلوب}$$

$$R = \begin{bmatrix} 0 & 0 & 1 \\ 1 & 0 & 0 \end{bmatrix}$$

(2)

$$y = \sqrt{f(x) - x^2} = \sqrt{x - x^2} \rightarrow x - x^2 \rightarrow R = (-\infty, \frac{1}{4}]$$

$$f(x) = \frac{(x-2)(x+2)x}{(x+2)} = x(x-2) \Rightarrow x \neq -2$$

-2

$$x^2 - 2x \neq 1 \rightarrow x^2 - 2x - 1 \neq 0 \rightarrow \begin{cases} x \neq -2 \\ x \neq 4 \end{cases} \rightarrow a \neq b$$

(2)

5

$$R_{x(x-2)} \Rightarrow [-1, +\infty) - \{1\} \Rightarrow f\left(\frac{x-2}{x}\right) = x$$

$$y = \sqrt{(x-2)^3} = \sqrt{x^3 - 6x^2 + 12x - 8} \rightarrow \begin{cases} a = -6 \\ b = 12 \end{cases}$$

-3

$$y = x - 2 \text{ of } [-6, 12] \rightarrow R = [-1, 0]$$

(2)

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$$\frac{x+1}{1-x} \gg 0 \rightarrow \frac{-1}{-1} + \frac{+1}{-1} \rightarrow D = [-1, 1)$$

-5

$$y = \frac{ax^2-1}{x^2+b} \sim x^2 = +\infty \rightarrow y = a = 1 \rightarrow a+b = 1+1 = 2$$

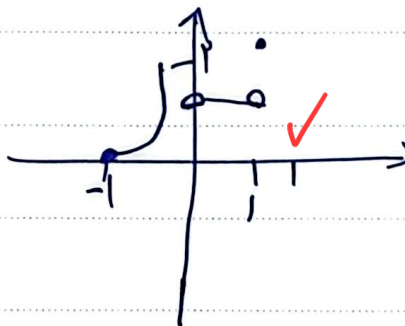
(2)

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

-15

$$0 \leq x \leq 1 \rightarrow y = 1$$

$$x=1 \rightarrow y=2$$

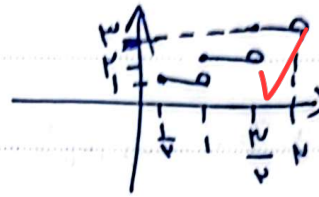


(2)

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

$$\frac{1}{2} [2n+1] \rightarrow y=1 \quad \frac{3}{2} [2n+2] \rightarrow y=3$$

$$[2n+3] \rightarrow y=2$$



(5)

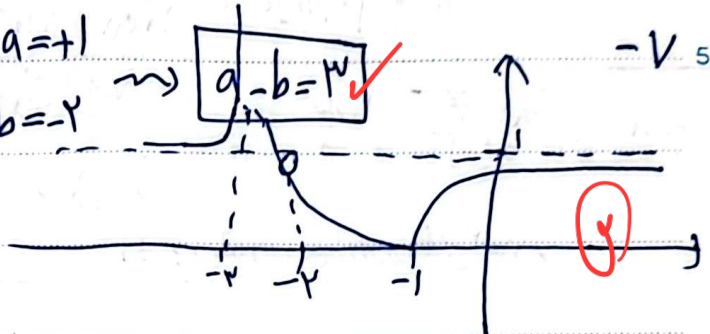
$$\frac{w-a}{b} > 0 \Rightarrow y = \left| \frac{n+1}{n+3} \right| \Rightarrow a=+1$$

$$b=-2$$

$$a-b=3$$

$$\left| \frac{n+1}{n+3} \right| = 1 \Rightarrow \frac{n+1}{n+3} = 1 \Rightarrow n+1 = n+3$$

$$n = -2$$



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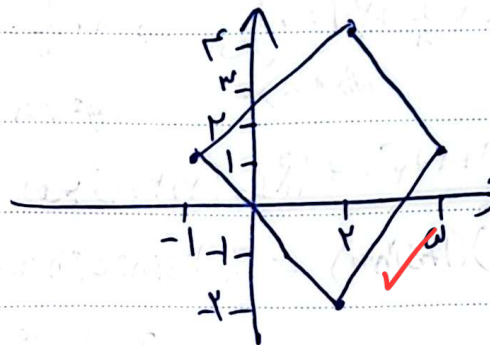
(5)

$$n > 2, y > 1 \Rightarrow y = 4 - n$$

$$n < 2, y > 1 \Rightarrow y = n + 2$$

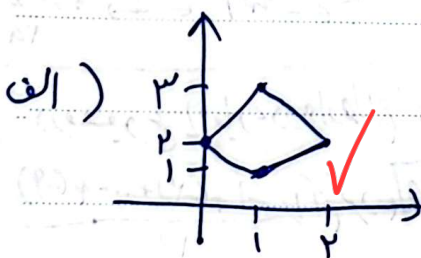
$$n < 2, y < 1 \Rightarrow y = -n$$

$$n > 2, y < 1 \Rightarrow y = n - 2$$

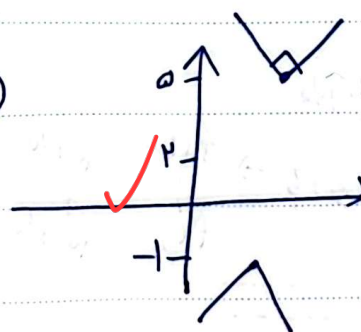


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5)



-9

$$|y-1| + |n-1| = 3$$

(5)

$$y = 3n + |an + b| \rightarrow |3| > |a| \rightarrow 3 > |a|$$

$$-3 < a < 3$$

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-b

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