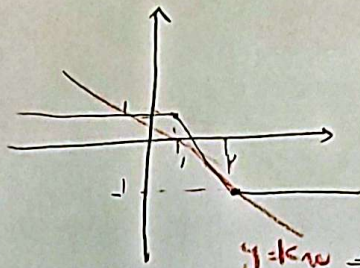


$$|n-1| - |n-1| = kn$$

تابع متناهي



$$y = kn \Rightarrow y = k(1-x) \quad |k| = 1$$

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

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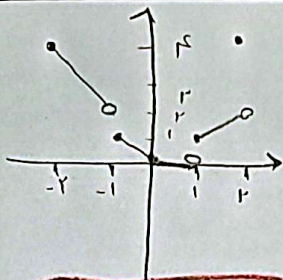
الف) $y = x[n]$

$$-1 \leq x < 1 \xrightarrow{[x] = -1} y = -1$$

$$x \in [-1, 0) \xrightarrow{[x] = -1} y = -1$$

$$x \in [0, 1) \xrightarrow{[x] = 0} y = 0$$

$$x \in [1, 2) \xrightarrow{[x] = 1} y = 1$$



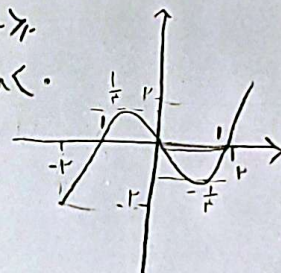
$$R = [0, 2] - \{1\}$$

ب) $y = x|x| - x$

$$y = \begin{cases} x^2 - x & x \geq 0 \\ -x^2 - x & x < 0 \end{cases}$$

$$R = [-1, 2]$$

لا بد من دالة
المتناهي =>
كل



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$$y = \frac{1}{n} + \frac{1}{n+1} + \frac{1}{n^2+n} = \frac{n+1}{n^2+n} = \frac{n+1}{n(n+1)} \Rightarrow y = \frac{1}{n}$$

$n \neq \{0, -1\}$

$$R = \mathbb{R} - \left\{ \frac{-1}{2}, \frac{1}{2} \right\} \Rightarrow a = -\frac{1}{2}, b = \frac{1}{2}$$

$a+b = 0$
 $-1/2 = -1/2$

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$$f(n) = \frac{n - 1\sqrt{n} + 1}{n - 1\sqrt{n} + 1} = \frac{(\sqrt{n}-1)(\sqrt{n}-1)}{(\sqrt{n}-1)(\sqrt{n}-1)} \xrightarrow{n \neq 1} f(n) = \frac{\sqrt{n}-1}{\sqrt{n}-1} \xrightarrow{\substack{\text{max } \sqrt{n} \rightarrow y=1 \\ \text{min } \sqrt{n} \rightarrow y=1}} \frac{\sqrt{n}-1}{\sqrt{n}-1}$$

لأن $\sqrt{n} \rightarrow 1$ عند $n=0$

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$$R_f = (-\infty, 1) \cup (1, +\infty)$$

لا بد من دالة المتناهي

$$f(n) = \frac{n^2 + 1n^2 - n - 1}{n^2 - 1} = \frac{(n^2 + 1n + 1)(n-1)}{(n+1)(n-1)} = \frac{(n+1)(n+1)(n-1)}{(n+1)(n-1)} \Rightarrow y = n+1$$

$n \neq \pm 1$

$$\Rightarrow R_f = \mathbb{R} - \{f(1), f(-1)\} = \mathbb{R} - \{1, 1\} \Rightarrow 1, 1$$

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