

$$[a]_1 = 1, -\epsilon$$

(الف)

$$\begin{cases} x \geq 1 \Rightarrow f(x) = \omega \\ -\epsilon \leq x < 1 \Rightarrow f(x) = \begin{matrix} \nearrow f = \omega \\ \searrow f = -\omega \end{matrix} \\ x < -\epsilon \Rightarrow f(x) = \omega \end{cases}$$

$$R_f = [-\omega, \omega]$$

$$y) f(x) = \frac{1}{x} - \left[\frac{1}{x} + 1 \right]$$

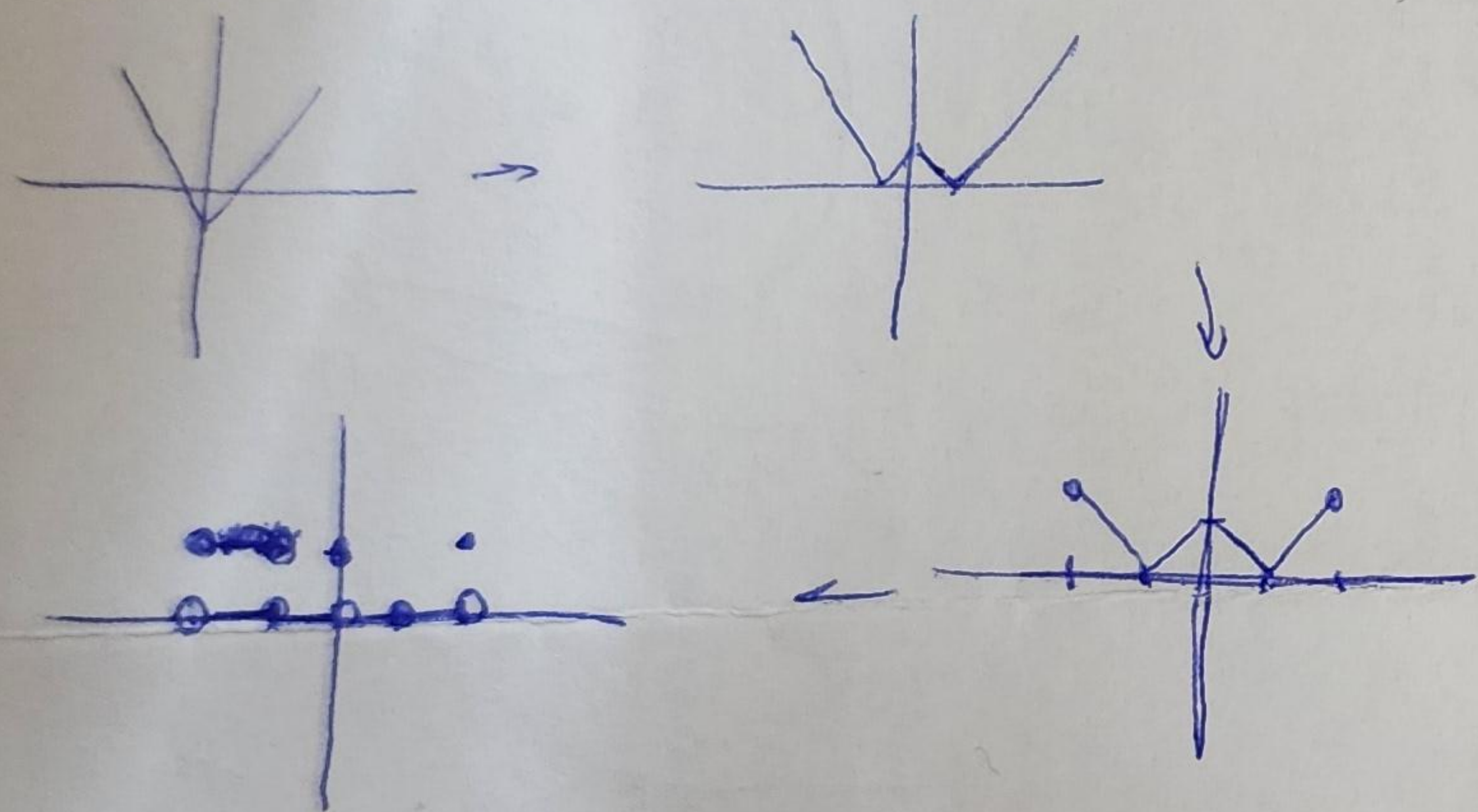
$$\frac{1}{x} - \left[\frac{1}{x} \right] + 1$$

$$0 \leq \frac{1}{x} < 1 \Rightarrow -1 \leq f(x) < 0$$

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

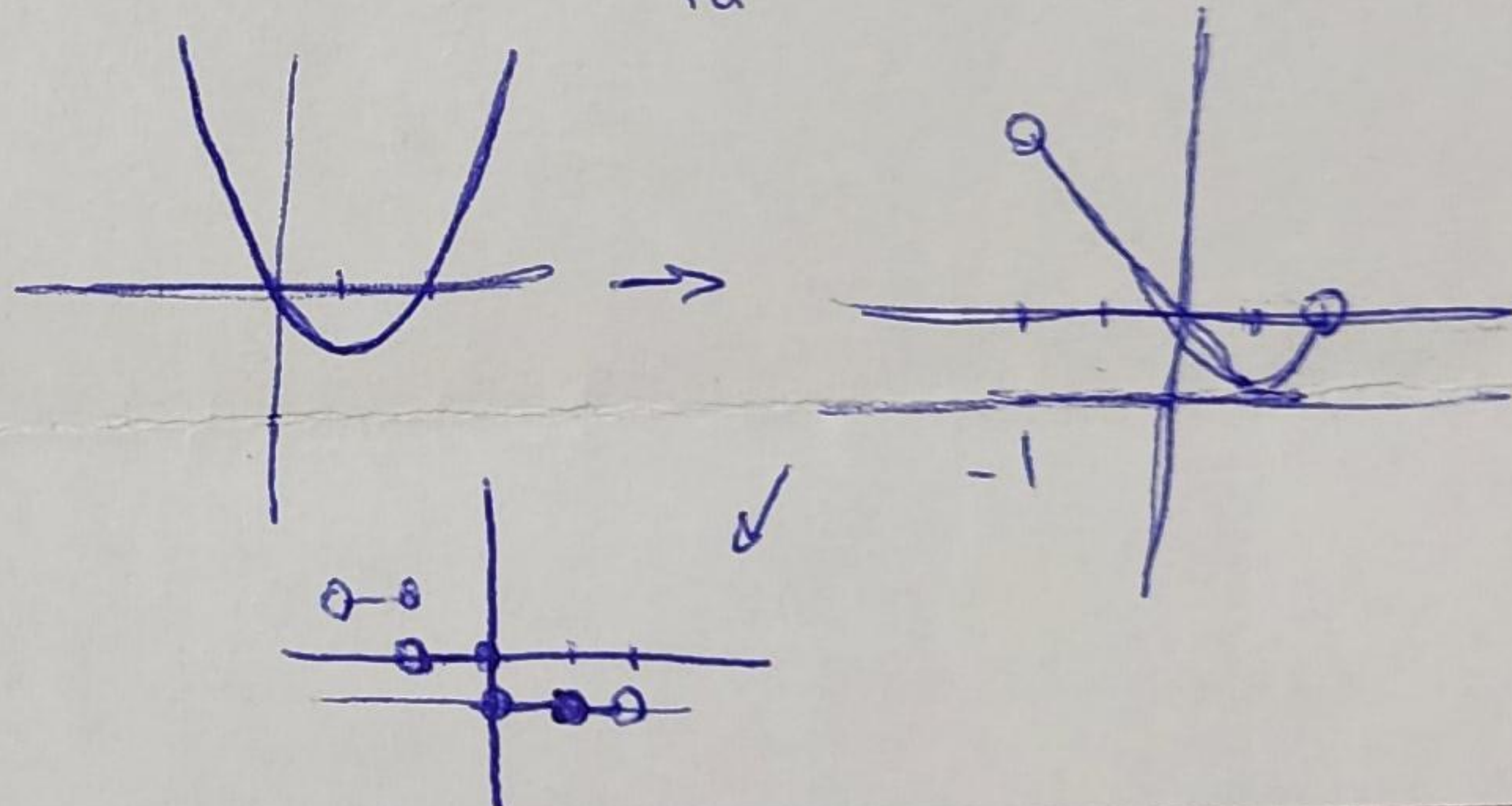
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$$x^2 - 2x \Rightarrow x(x-2) \geq 0$$

$$\frac{-b}{2a} = 1$$



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$$\begin{cases} a + [b] = \epsilon, \gamma \xrightarrow{\text{if}} [a] + [b] = \epsilon \\ b - [a] = \gamma, \epsilon \xrightarrow{\text{if}} [b] + [a] = \gamma \end{cases} \quad \gamma[b] = \gamma \quad [b] = \gamma \Rightarrow [a] = 1$$

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$$\begin{cases} b - 1 = \gamma, \epsilon \Rightarrow b = \gamma, \epsilon \\ a + \gamma = \epsilon, \gamma \Rightarrow a = 1, \gamma \end{cases} \Rightarrow \epsilon, \gamma$$

$$1 - \sqrt{2} = -(\sqrt{2} - 1)$$

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

$$|1 - \sqrt{2}| < 1 \Rightarrow (1 - \sqrt{2})^4 \approx 0 \times 10^{-2}$$

$$(1 + \sqrt{2})^4 + (1 - \sqrt{2})^4 = 191 \Rightarrow 191 - 10^{-2} \times \omega = [191, 199 \omega]$$

$$191 \omega$$

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