

$$\frac{1}{n-1} \Rightarrow n \neq 1$$

$$1 = (n-1)^2 \Rightarrow n^2 - 2n + 1 - 1 = 0$$

$$n(n-2) = 0$$

$$\downarrow \quad \downarrow \quad \checkmark$$

۰ ۲

الف) $x \neq 0$ $-2 < \frac{2n-1}{n} < 2$

$$\begin{cases} x > 0 \Rightarrow -2x < 2n-1 < 2x \Rightarrow x > \frac{1}{2} \checkmark \\ x < 0 \Rightarrow -2x > 2n-1 > 2x \Rightarrow 2n-1 > 2x \Rightarrow x < \frac{1}{2} \checkmark \end{cases}$$

$$(\frac{1}{2}, +\infty) \checkmark$$

$$\frac{n-2}{2n+1} > 0 \Rightarrow \frac{n-2}{2n+1} > -\frac{1}{2} \Rightarrow \frac{-n-3}{2n+1} > -\frac{1}{2} \Rightarrow -2n-6 > -2n-1 \Rightarrow -5 > 0$$

$$\frac{n-2+2n+1}{2n+1} < 0 \Rightarrow \frac{3n-1}{2n+1} < 0$$

$$\frac{-\frac{1}{3}}{-1-1+} \Rightarrow \frac{1}{3} < x < \frac{1}{3} \Rightarrow I \cap J = \emptyset \Rightarrow (-\frac{1}{3}, \frac{1}{3}) \cap (\frac{1}{3}, \frac{1}{3}) = \emptyset$$

$$n^2 < |n+4| \Rightarrow n-4 < n^2 < n+4$$

$$n^2 < n+4 \Rightarrow n^2 - n - 4 < 0$$

$$n^2 > n-4 \Rightarrow n^2 - n + 4 > 0$$

$$\frac{3+(1-2)}{2} = \frac{1}{2} \rightarrow |n-a| < \beta$$

$$|n - \frac{1}{2}| < \frac{1}{2}$$

$$6 \Rightarrow 2, 3, 4, 5, 6$$

$$\begin{cases} n \geq 2 & y = n+1 - 2n + n - 2 = -1 \checkmark \text{min} \\ 0 \leq n < 2 & y = n+1 - 2n - n + 2 = -2n + 3 \xrightarrow{n=0} y = 3 \text{max} \checkmark \end{cases}$$

مجموع

$$\boxed{2}$$

$$-1 \leq n < 0 \quad y = n+1 + 2n + 2 - n = 2n + 3$$

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

$$\frac{1}{2} |n-4| - 2 \rightarrow \frac{1}{2} |n+4| - 1$$

$$\frac{1}{2} |n+4| - 1 = \left| \frac{1}{2} n \right| - 2 \Rightarrow n = -3 \checkmark$$

$$[1, 2] = 1, 2$$

(الف)

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

$$R_f = [-\omega, \omega] \rightarrow \{-\omega, -1, \dots, 1, \omega\}$$

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

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

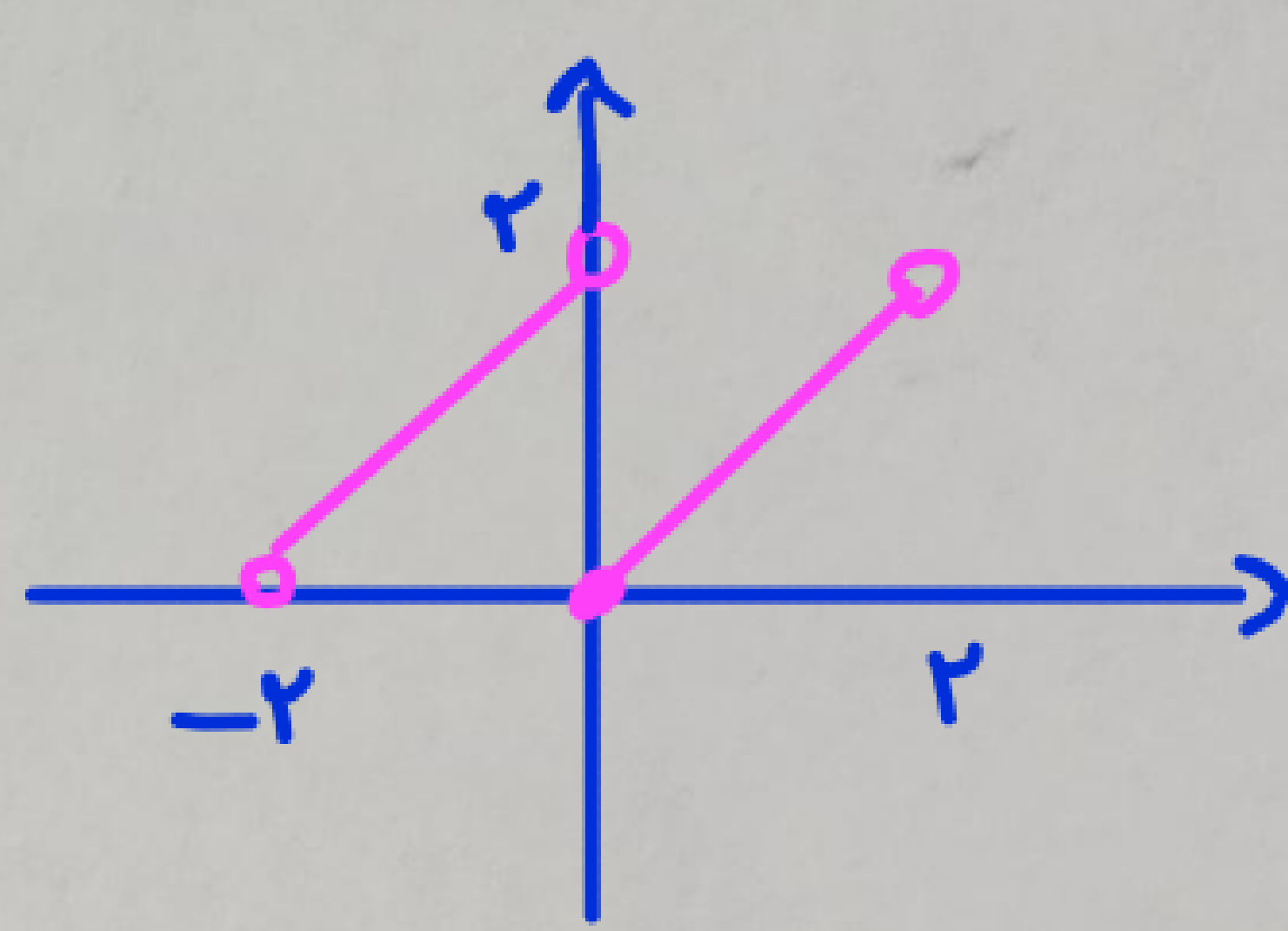
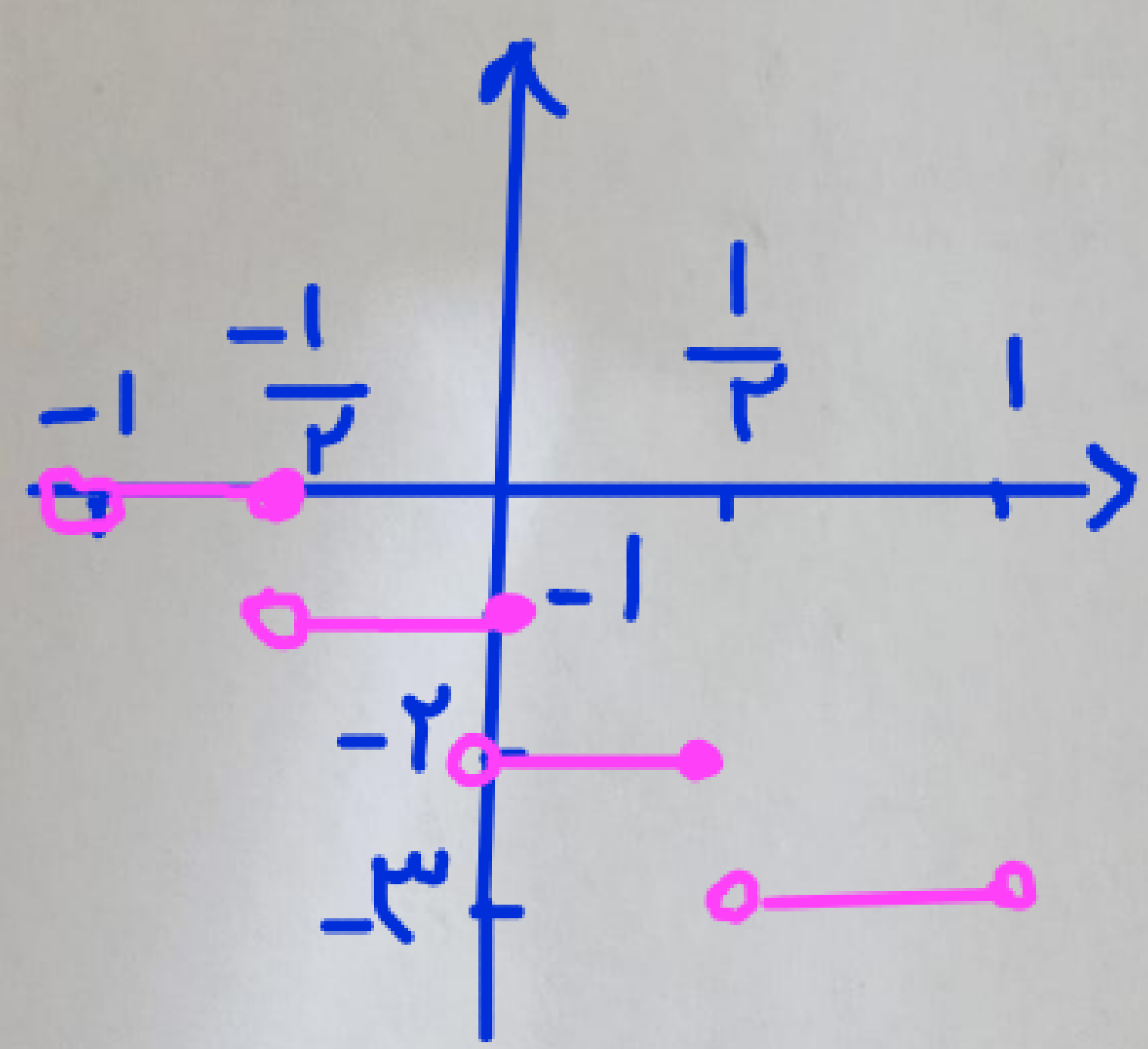
$$0 \leq \frac{1}{x} < 1 \Rightarrow -1 \leq f(x) < 0$$

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

(1, 75)

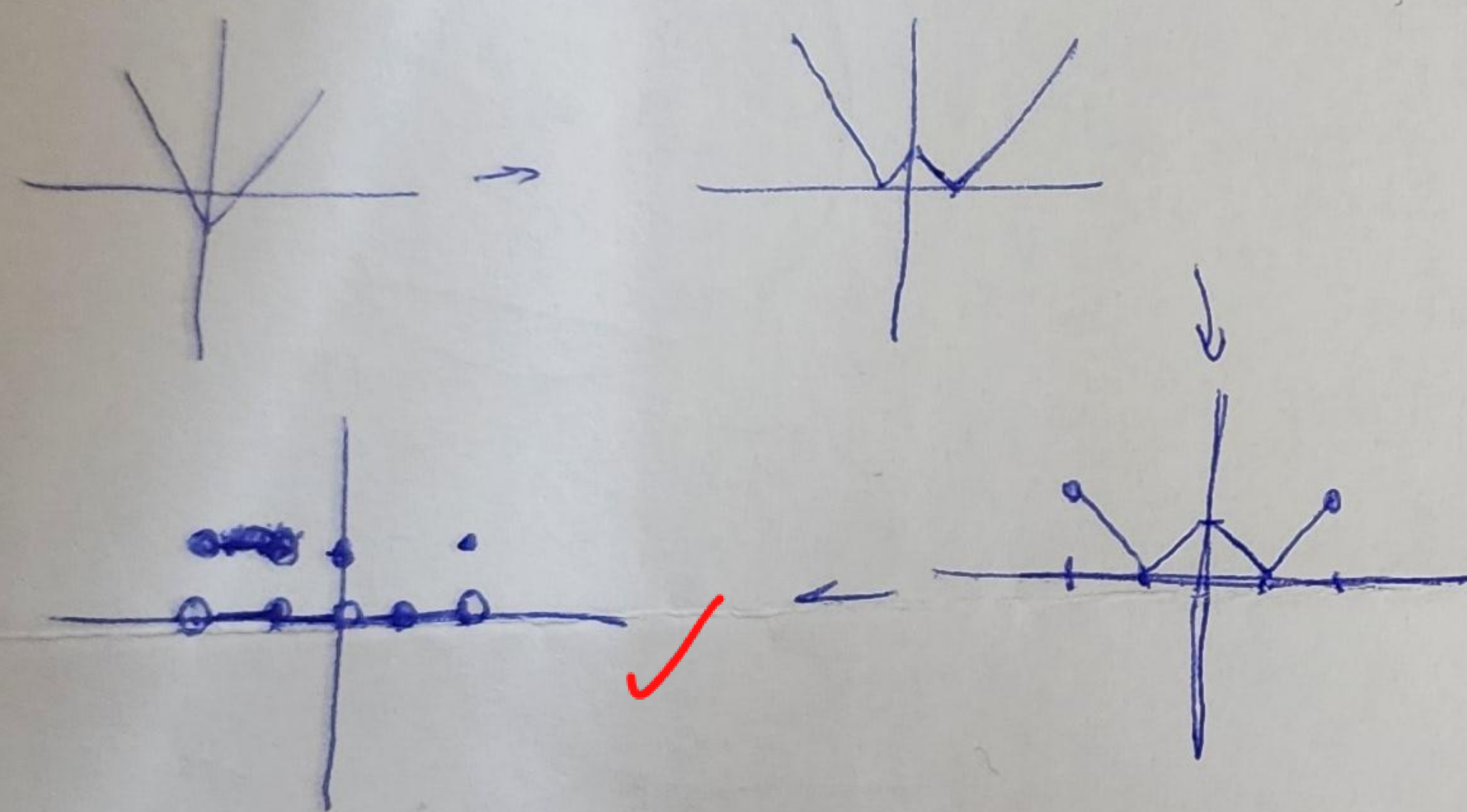
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چون برائت داریم، برد فقط شامل اعداد صحیح این بازه می باشد



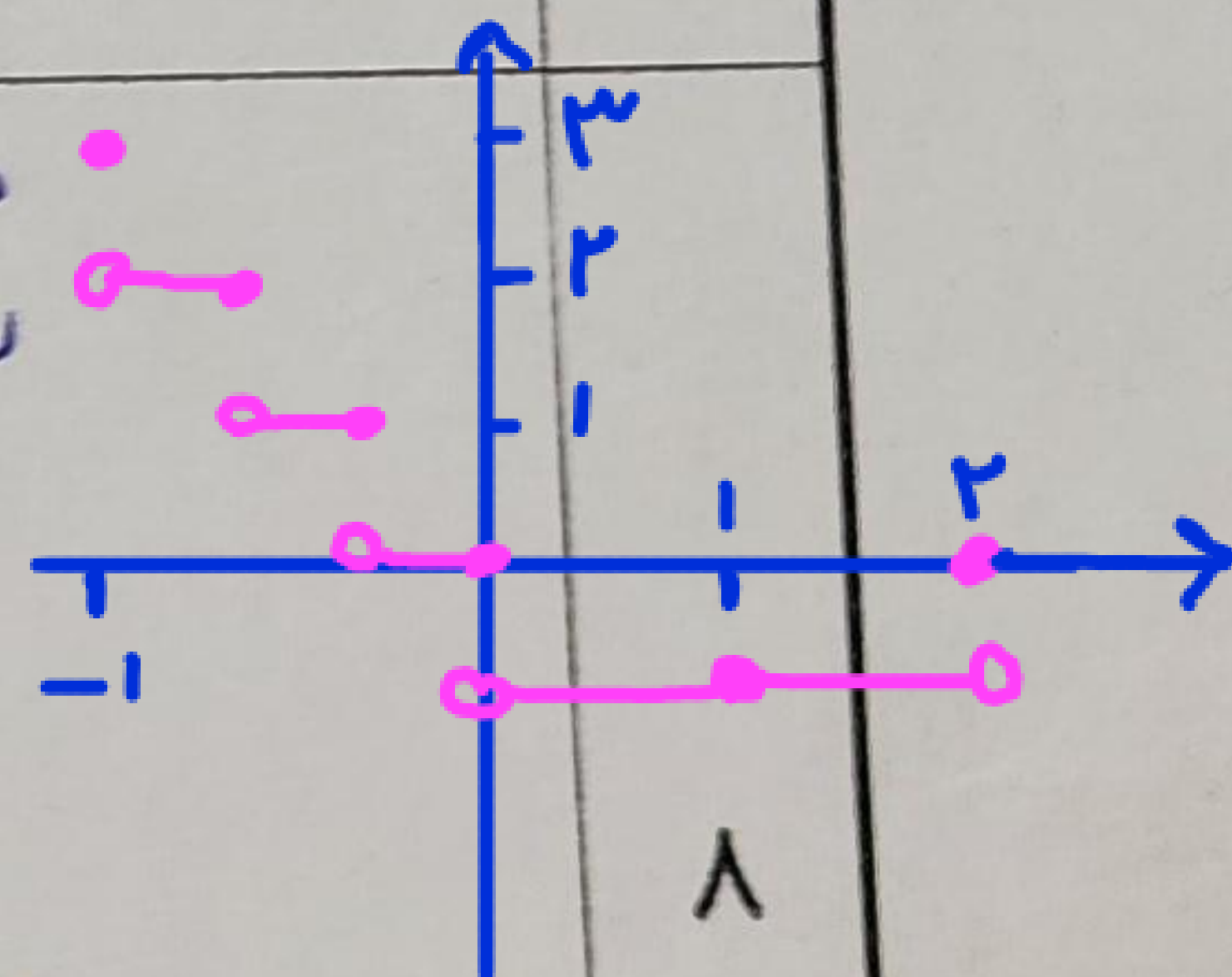
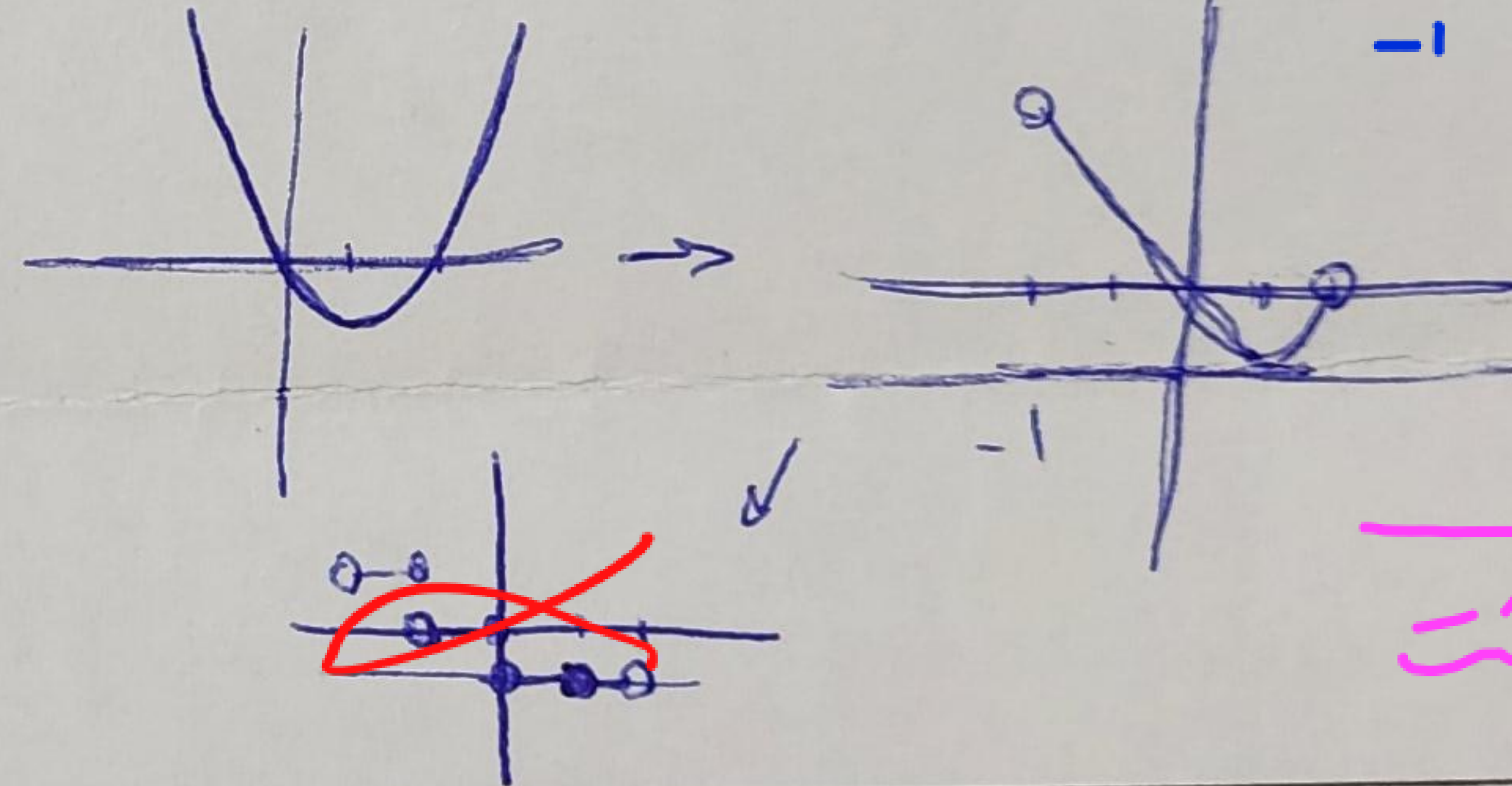
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7



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

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



8

(1, 5)

برائت

$$\begin{cases} a + [b] = 4, 2 \xrightarrow{\text{if}} [a] + [b] = 4 \\ b - [a] = 2, 4 \xrightarrow{\text{if}} [b] + [a] = 2 \end{cases}$$

$$2[b] = 6 \quad [b] = 3 \Rightarrow [a] = 1$$

$$\begin{cases} b - 1 = 2, 4 \Rightarrow b = 3, 5 \\ a + 3 = 4, 2 \Rightarrow a = 1, 2 \end{cases} \Rightarrow 1, 6 \checkmark$$

9

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

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

$$|1 - \sqrt{2}| < 1 \Rightarrow (1 - \sqrt{2})^4 \approx 0 \times 10^{-3}$$

$$(1 + \sqrt{2})^4 + (1 - \sqrt{2})^4 = 191 \Rightarrow 191 - 10^{-3} \times \omega = [171, 199 \omega]$$

✓ 197⁰

(2)

10