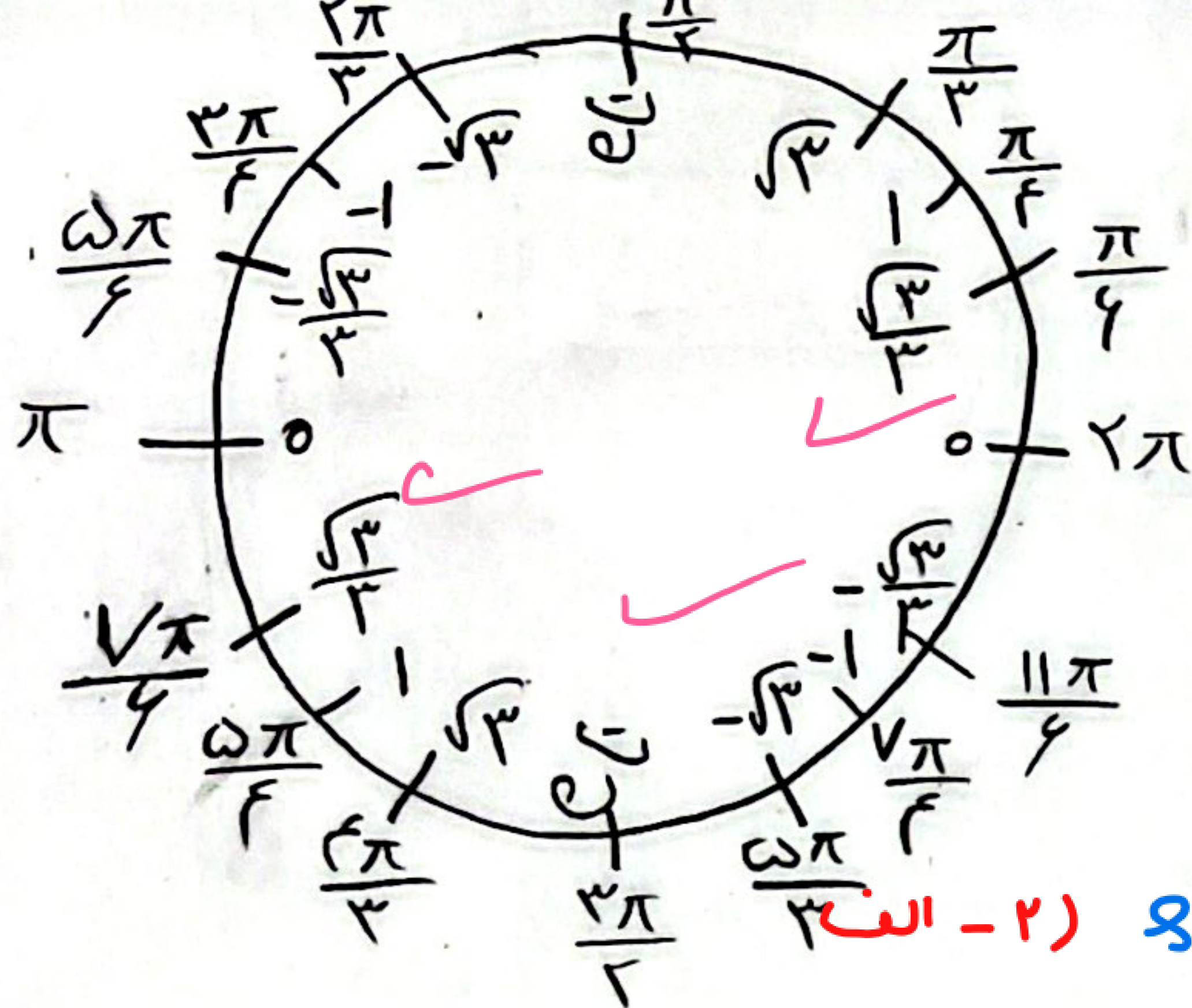


باران مرادی ۱۹/۷/۵ آفرین خوب نوشتی!



$$\tan = ?$$

①

الف) $\frac{1}{2} + 1 + (-1) = \frac{1}{2}$

ب) $\frac{\sqrt{3}}{2} + \frac{\sqrt{3}}{2} - 2 \times \frac{\sqrt{3}}{2} = \frac{5\sqrt{3}}{2}$

ج) $-\frac{\sqrt{3}}{3} + 1 \times \frac{\sqrt{3}}{3} - 2 \times -\frac{\sqrt{3}}{3} = \frac{-\sqrt{3} + 3\sqrt{3} + 2\sqrt{3}}{3} = \frac{4\sqrt{3}}{3}$

د) $1 + 1 = 2$

$$a^2 + 2a = 2a + a + 2$$

$$a^2 + a - 2 = 0$$

$$(a+2)(a-1) = 0 \quad a = 1, -2$$

$$f(x) = \begin{cases} x^2 + 2x & x \geq 1 \\ 2x + 2 & x < 1 \end{cases}$$

$$f(1) = 1 + 2 = 3$$

$$x \geq 1$$

$$x + 1 \geq 2$$

$$x + 1 < -2$$

$$x < -3 \rightarrow \checkmark$$

$$1 - b = a + (-6) \rightarrow 24 = a + b$$

پ

④

الف) $x^3 - 6x^2 \neq 0$

$x^2(x-6) \rightarrow D_f = \mathbb{R} - \{0, 6\}$

ب) $2x^2 + 6x^2 + 2x + 2 \neq 0 \rightarrow$

$$x^3 + 2x^2 + 2x + 2 \neq 0$$

$$x^2(x+2) + (x+2) \neq 0$$

$$(x+2)(x^2+1) \neq 0$$

$$D_f = \mathbb{R} - \{-2\}$$

⑤

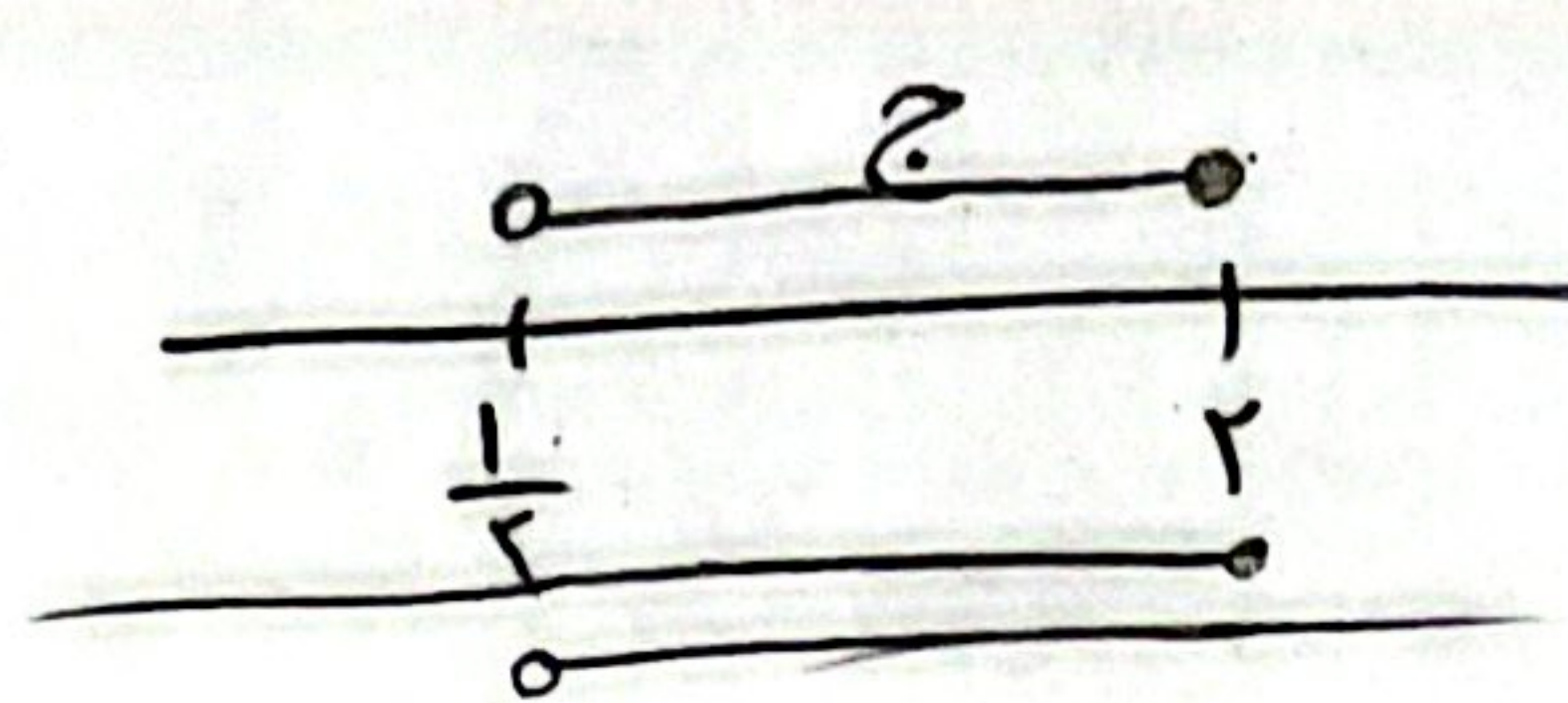
الف) $x^2 - 1 \geq 0 \rightarrow \frac{-1}{+} \frac{1}{-} \frac{1}{+}$

$x - 2 \geq 0$

$x \geq 2 \rightarrow [2, +\infty)$

$D_f = [2, +\infty)$

ب) $\begin{cases} 4-3x \geq 0 \\ 4x-3 > 0 \end{cases} \rightarrow \begin{cases} x \leq \frac{4}{3} \\ x > \frac{3}{4} \end{cases}$

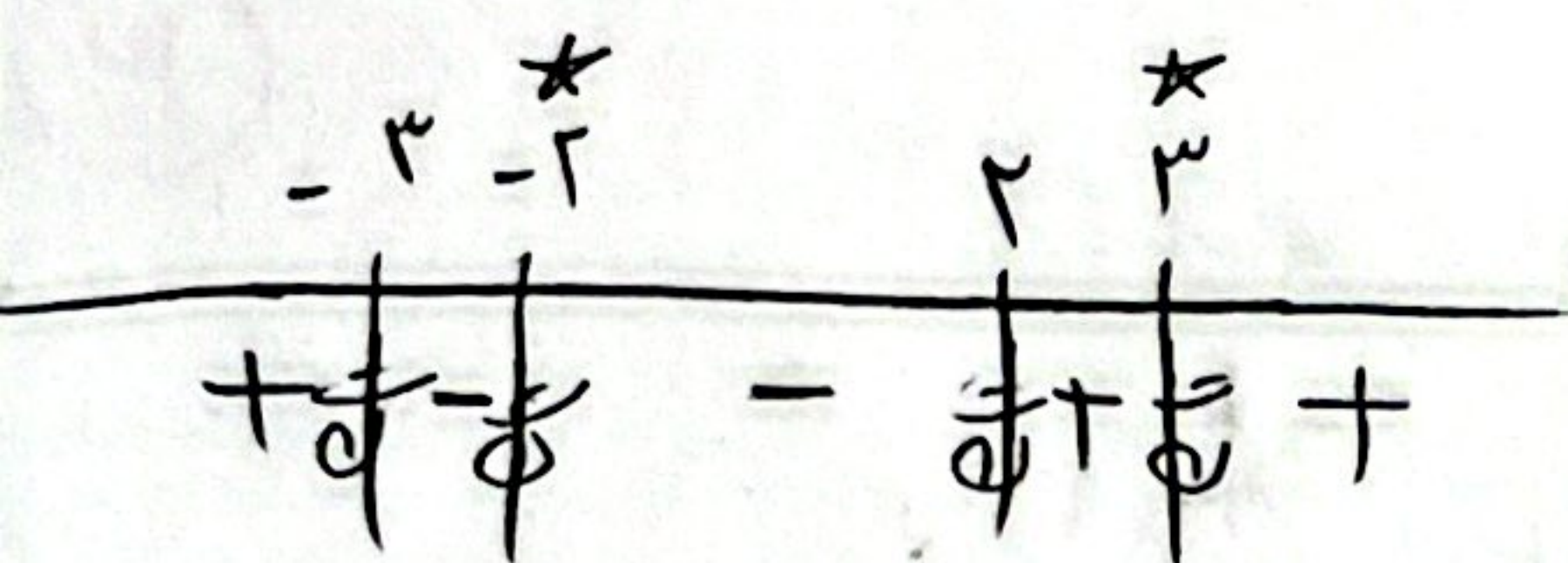


$D_f = (\frac{3}{4}, \frac{4}{3}]$

$\begin{cases} 12-a=0 \\ a=12 \\ b-4=0 \\ b=4 \end{cases} \rightarrow \frac{b}{a} = \frac{4}{12} = \frac{1}{3}$

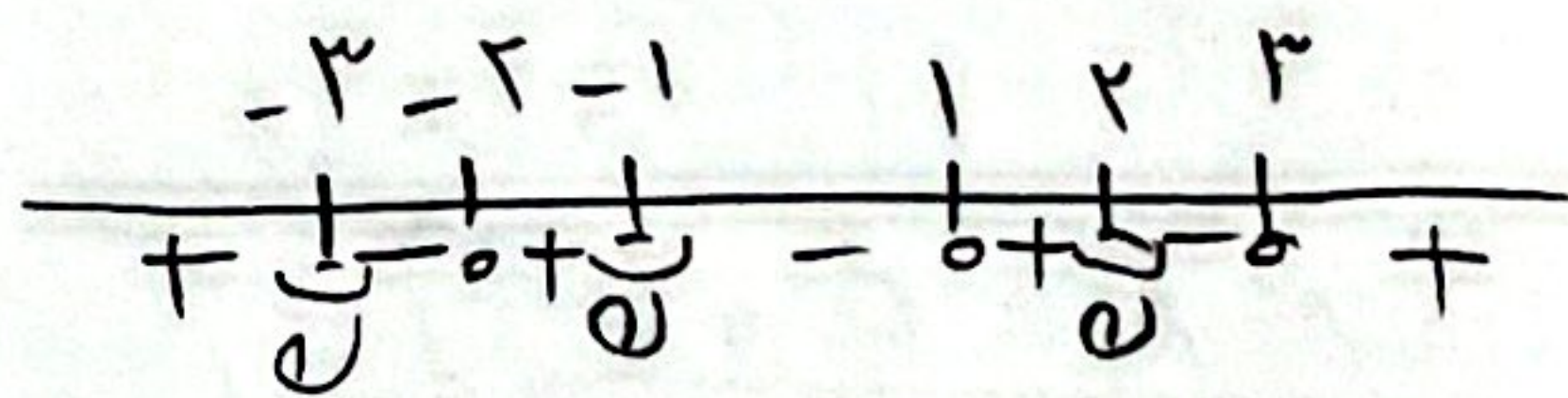
الف) $\frac{(x-3)(x+2)}{x^2-13x+36}$

$x^2 = t$
 $t^2 - 13t + 36 = 0$
 $(t-9)(t-4) = 0$
 $x^2 = 9 \rightarrow x = \pm 3$
 $x^2 = 4 \rightarrow x = \pm 2$



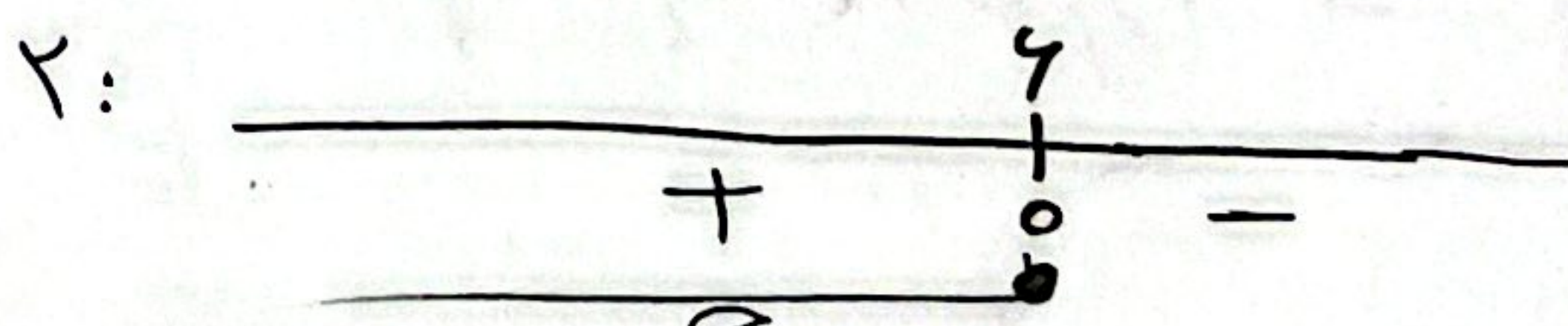
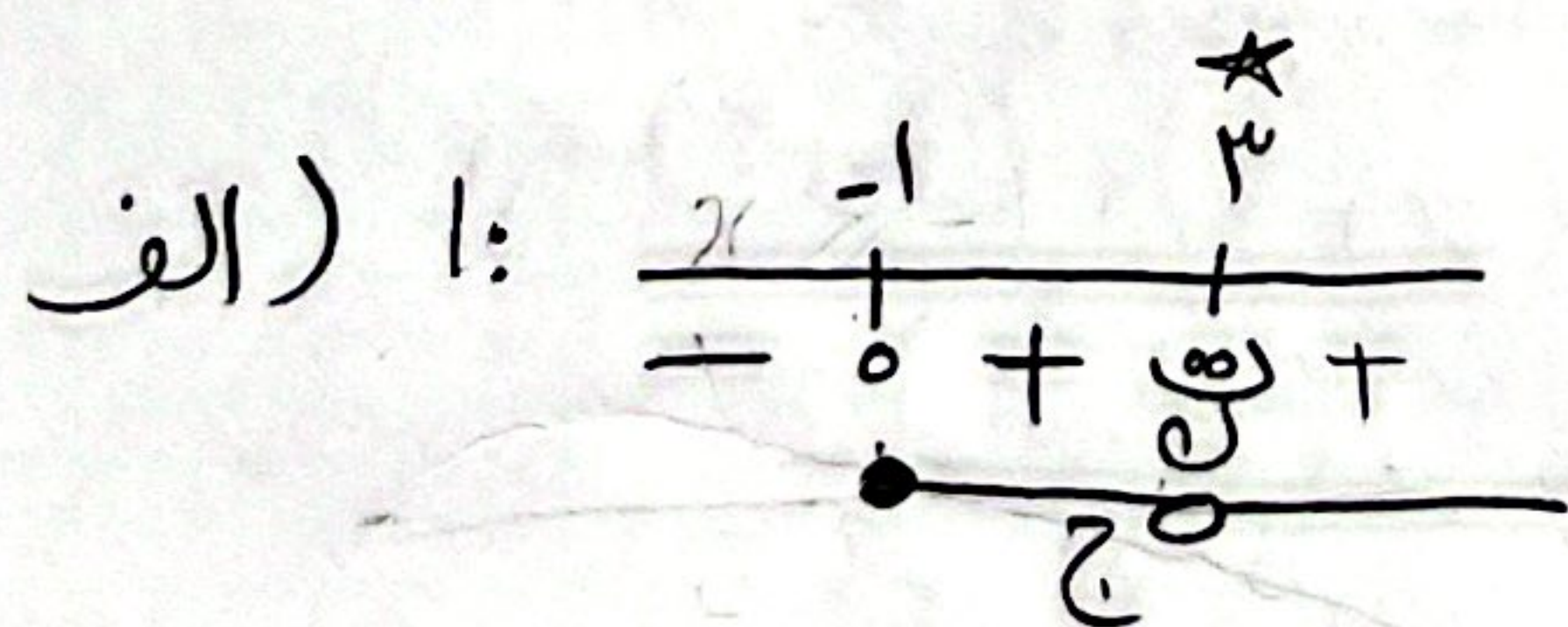
$D_f = (-\infty, -3) \cup (2, 3) \cup (3, +\infty)$

ب) $\frac{(x+2)(x-1)(x-3)}{(x-2)(x+1)(x+3)}$

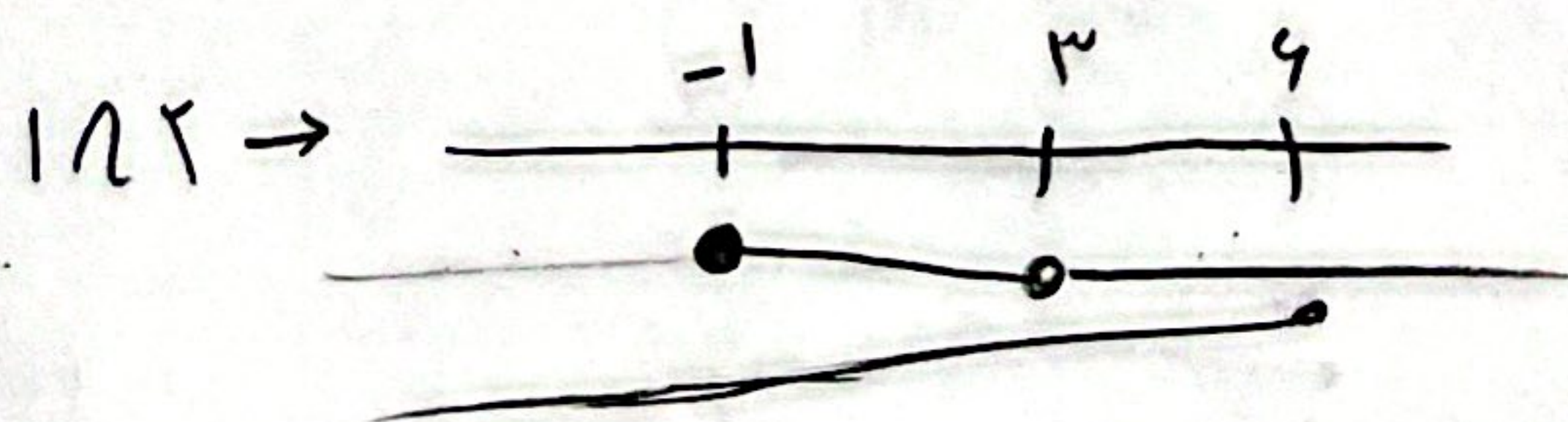


$D_f = (-\infty, -3) \cup [-2, -1) \cup [1, 2) \cup [3, +\infty)$

الف) $[x] \geq 2 \rightarrow x \geq 2 \rightarrow D_f = [2, +\infty)$ ب) $[x] \geq \frac{9}{x} \rightarrow x \geq 3 \rightarrow D_f = [3, +\infty)$



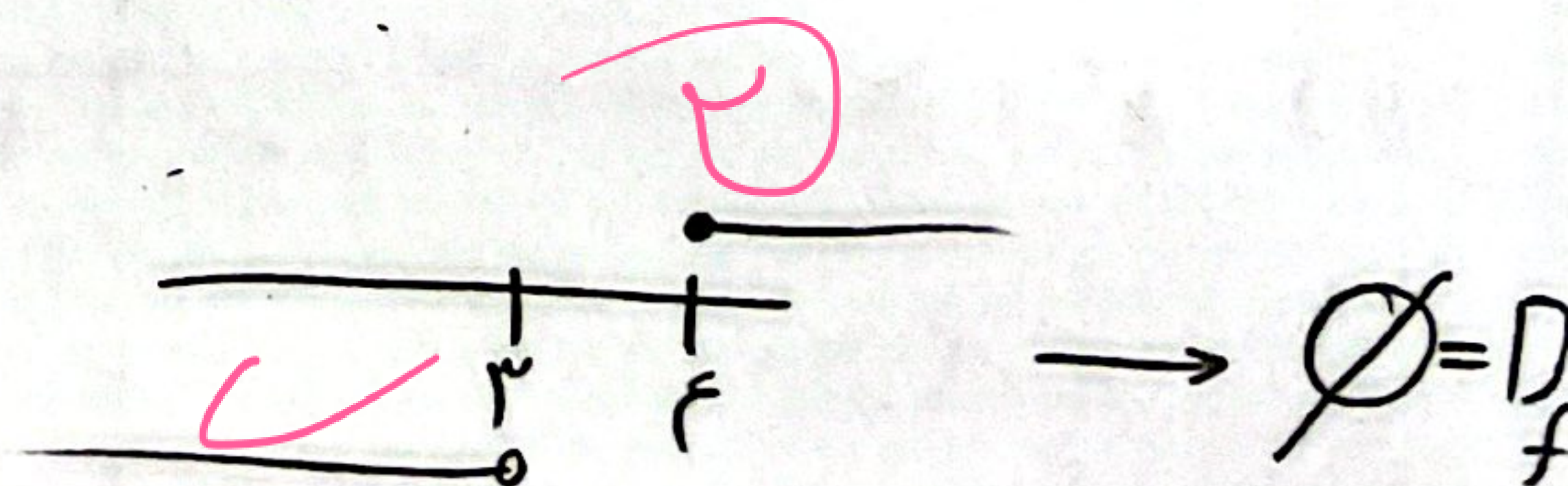
$\Delta = 4 - 14 \rightarrow \Delta < 0 \rightarrow$ همیشه ندارد



$D_f = [-1, 4] - \{3\}$

ب) $[x] \geq 4 \rightarrow x \geq 4$

$[x] \leq 2 \rightarrow x < 3$



✓

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