

$$-2 \leq \frac{3n+2}{5} \leq 4 \Rightarrow -10 \leq 3n+2 \leq 20 \Rightarrow \quad (1)$$

$$-12 \leq 3n \leq 18 \Rightarrow -4 \leq n \leq 6$$

$$D_f = [-4, 6]$$

$$D_{f(3n+2)} = [-2, 3] \quad (2)$$

$$-6 \leq 3n \leq 9 \Rightarrow$$

$$D_f = [-8, 7]$$

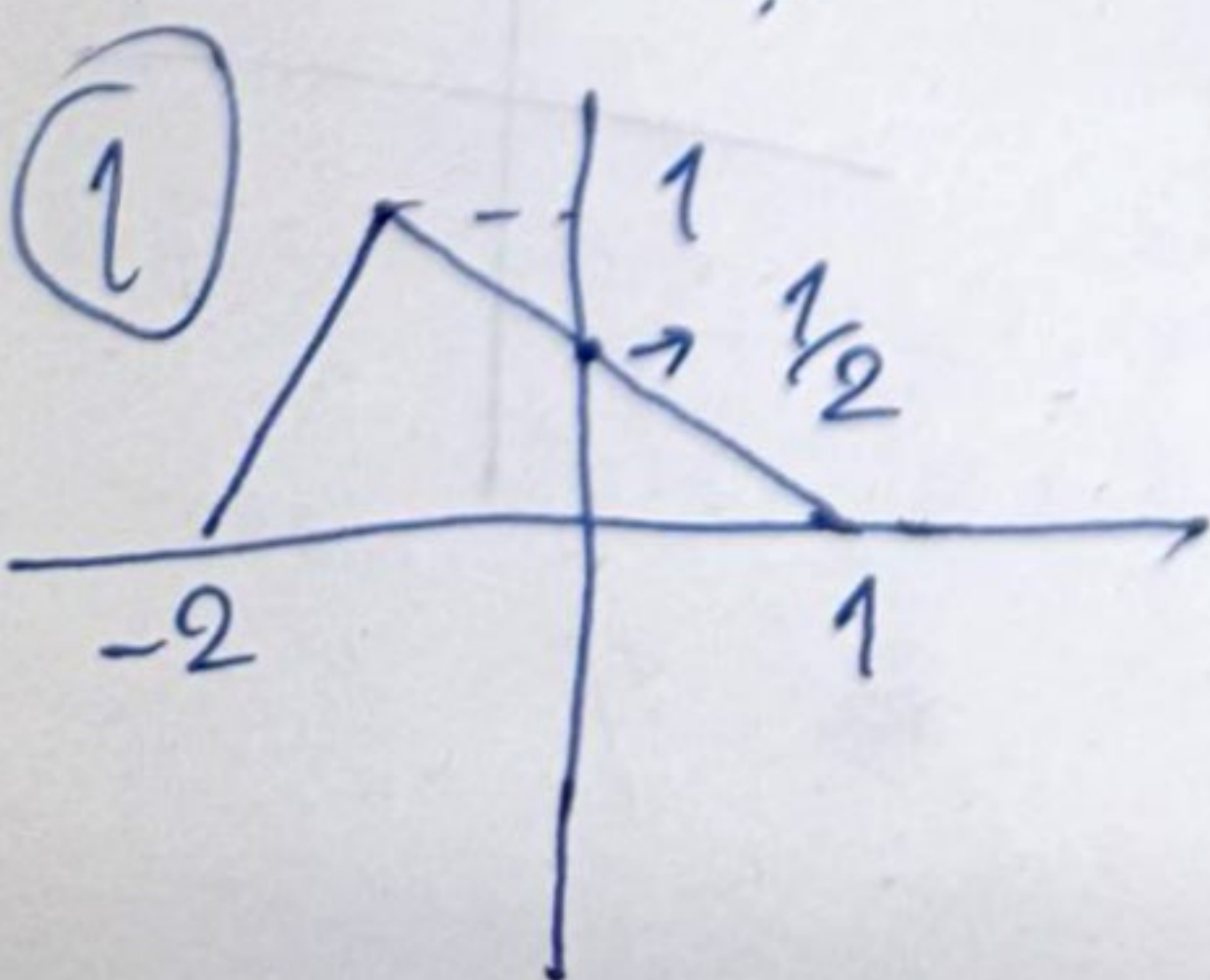
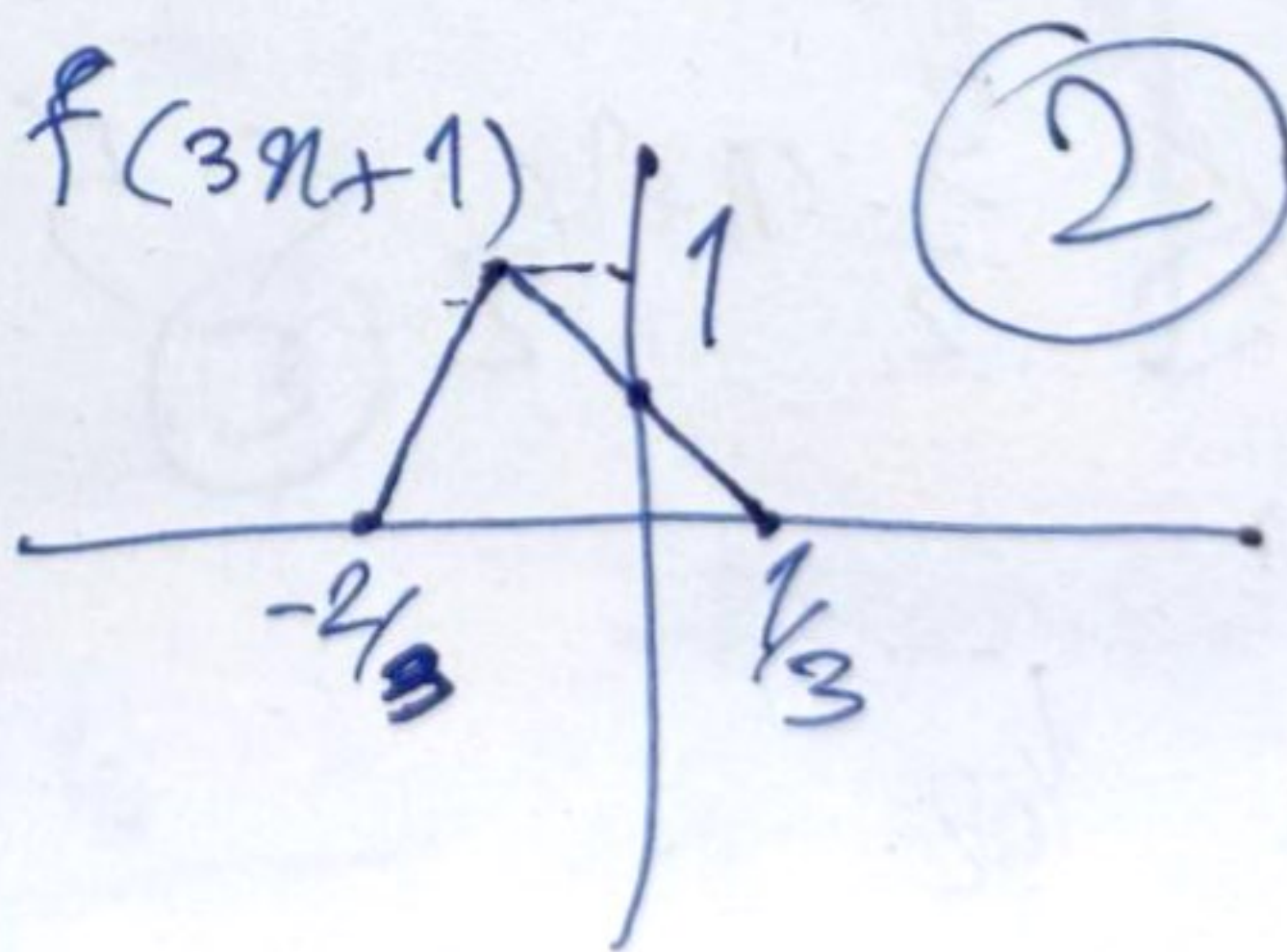
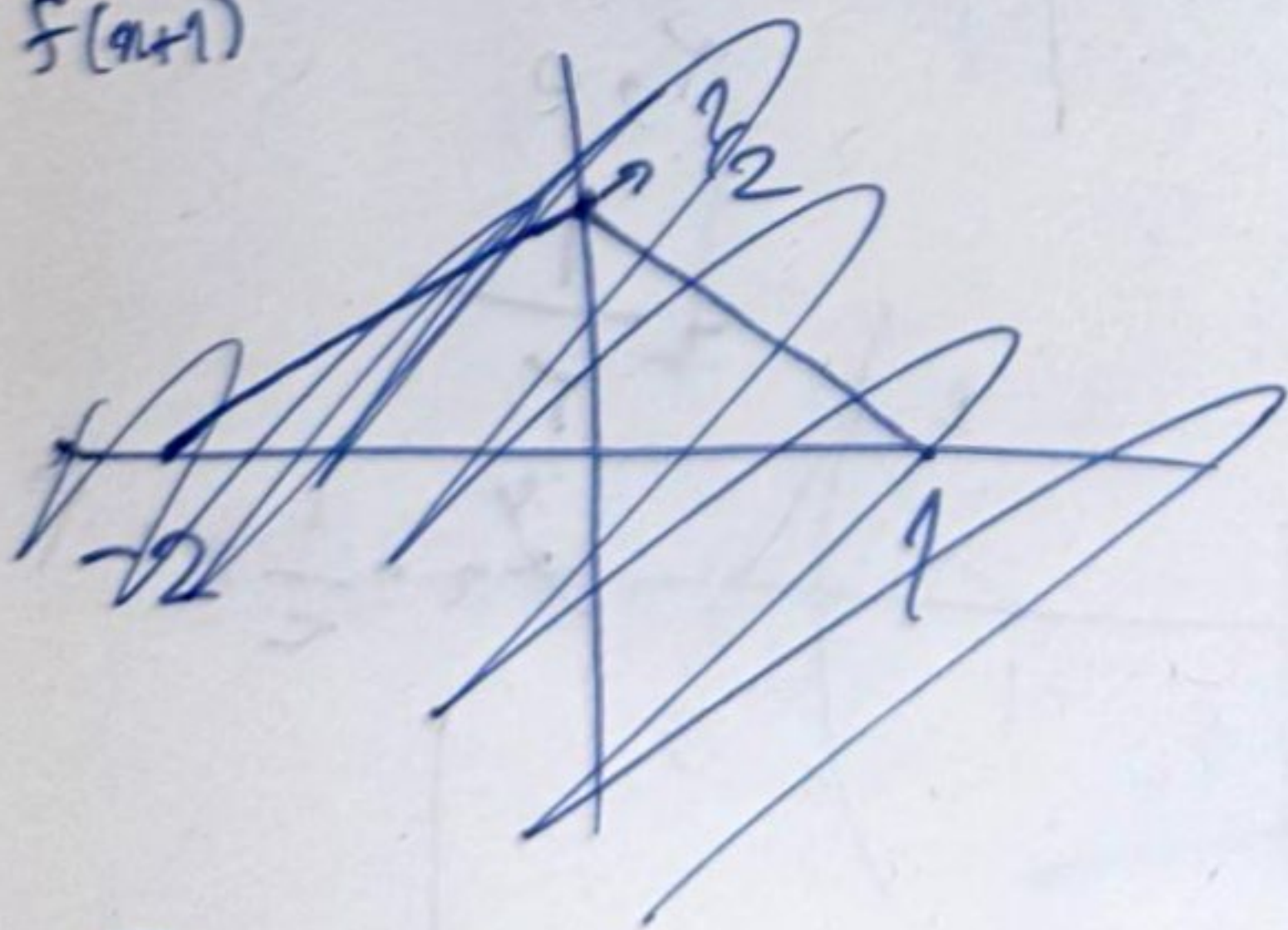
$$-8 \leq 3n-2 \leq 7$$

$$D = [-1, 3] \quad \frac{f(\frac{3n+1}{2})}{\frac{1}{2}} \Rightarrow -\frac{3}{2} \leq \frac{3n}{2} \leq \frac{9}{2} \Rightarrow -1 \leq \frac{3n}{2} + \frac{1}{2} \leq 5 \quad (3)$$

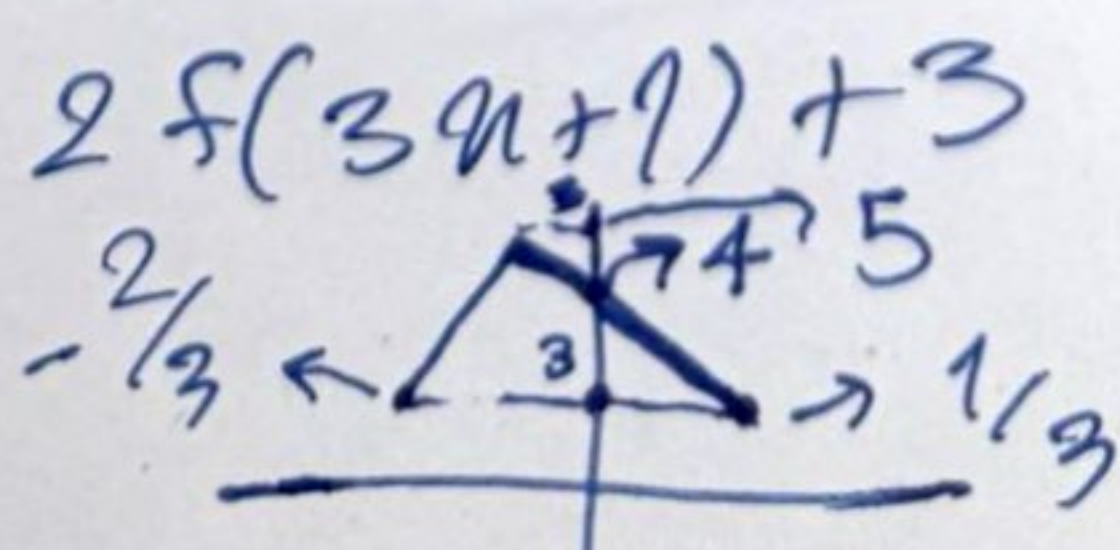
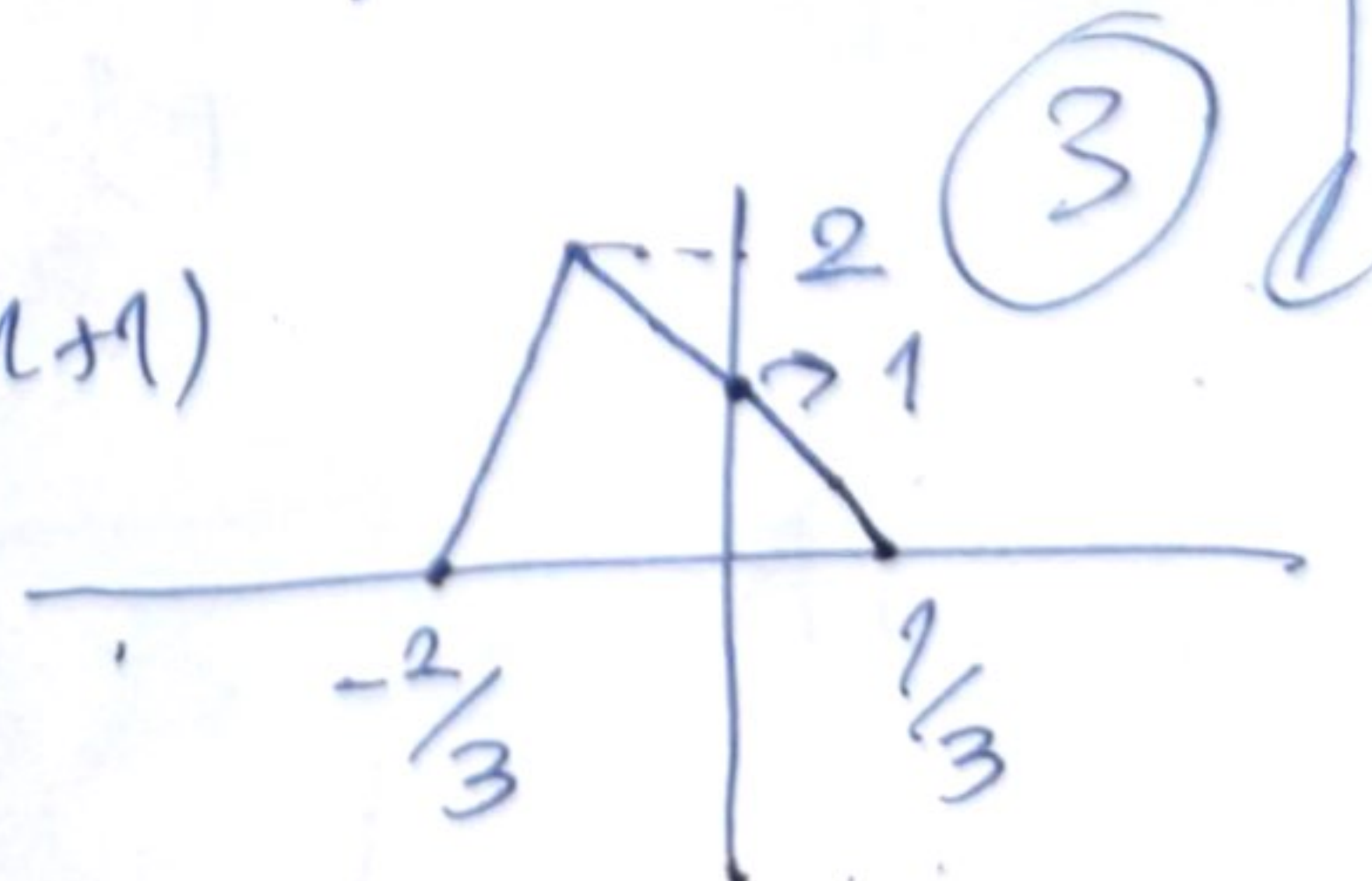
$$\Rightarrow -1 \leq -5n+2 \leq 5 \Rightarrow -5 \leq 5n-2 \leq 1 \Rightarrow f(n) = [-1, 5]$$

$$D_{f(2-5n)} = (-\frac{3}{5}, \frac{3}{5}) \Rightarrow -\frac{3}{5} \leq n \leq \frac{3}{5}$$

$f(n+1)$

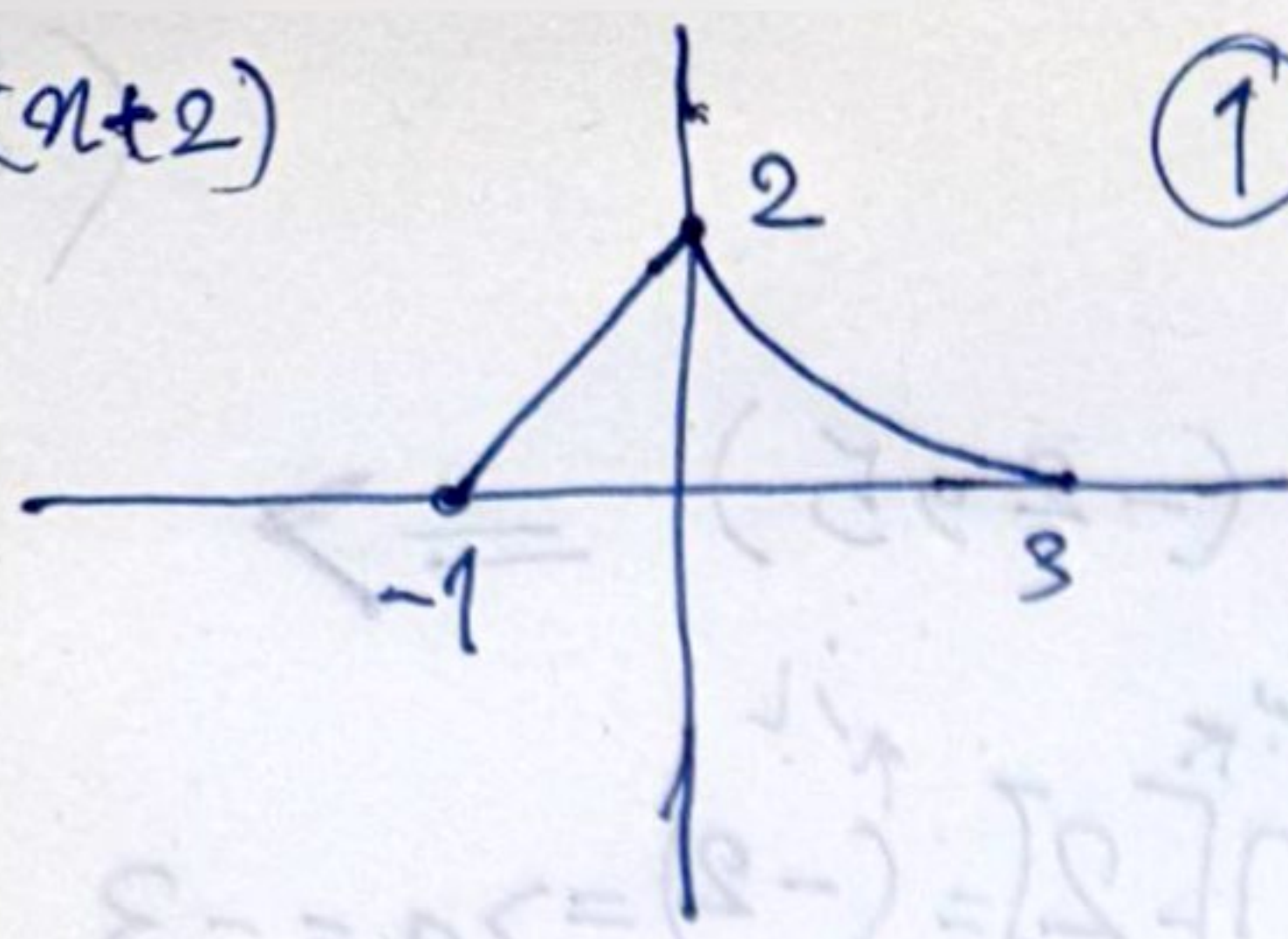


$2f(3n+1)$



(4)

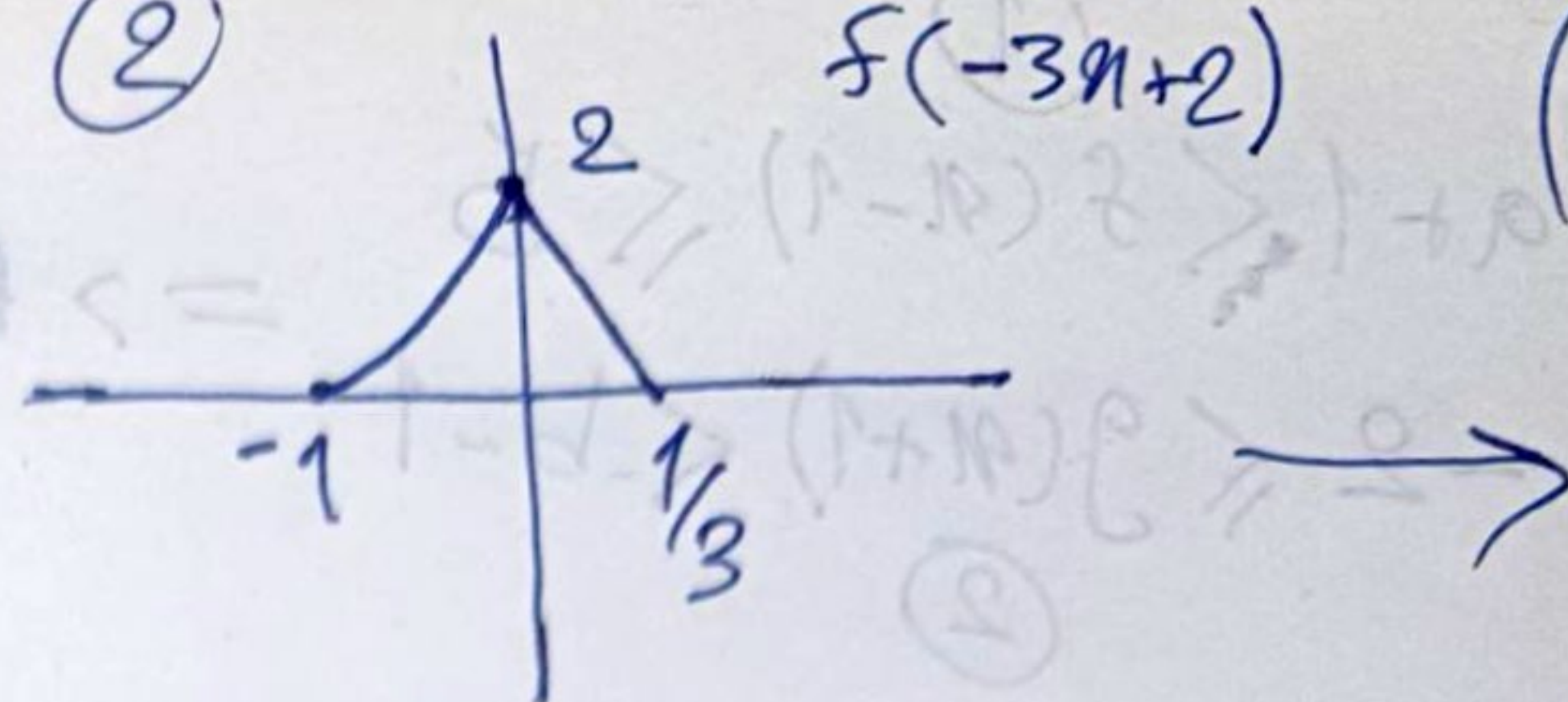
$$f(x+2)$$



①

②

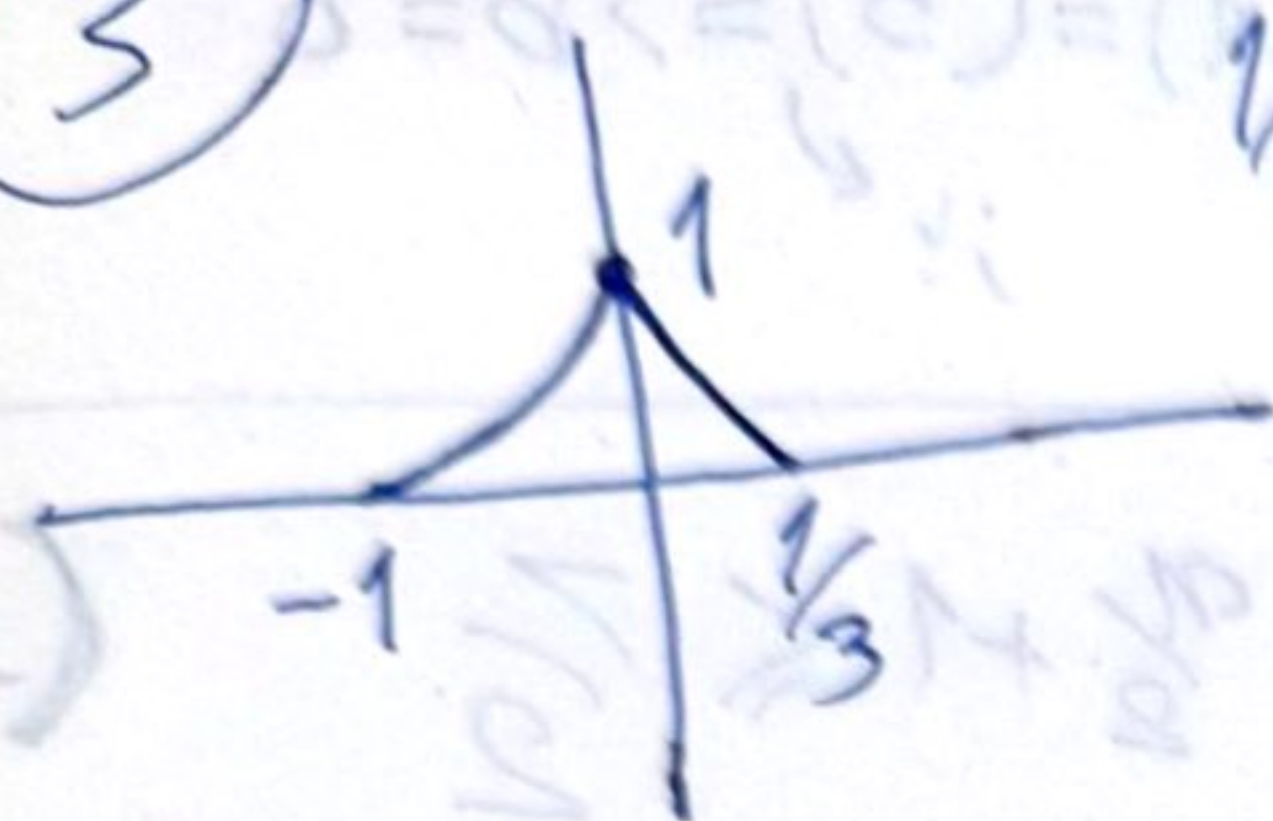
$$f(-3x+2)$$



⑤

③

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



$$g(x) = -\frac{1}{3}(x-4)^2 + 3 = 0 \rightarrow (x-4)^2 = 9$$

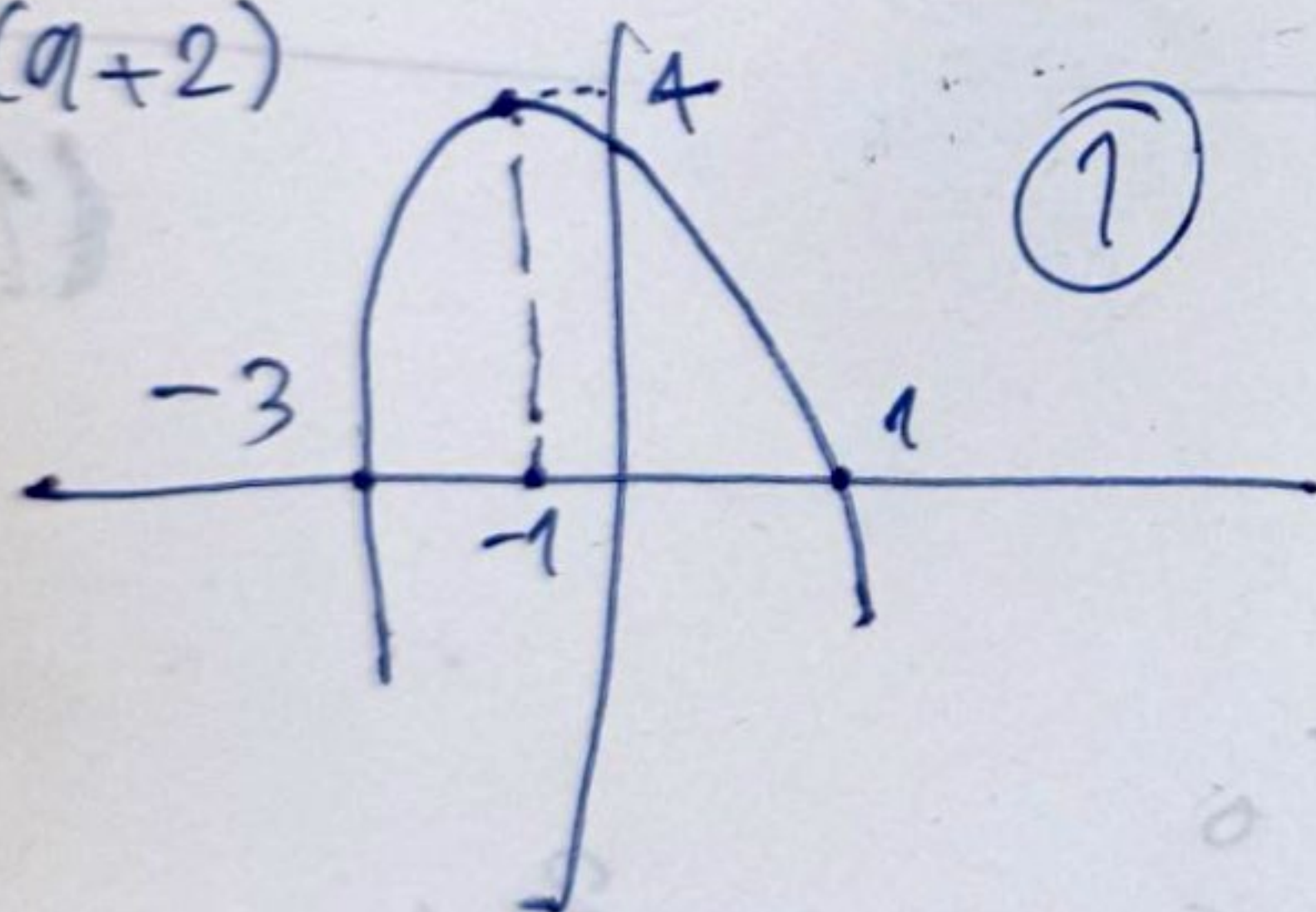
⑥

$$x-4 = \pm 3$$

$$x = 7, 1$$

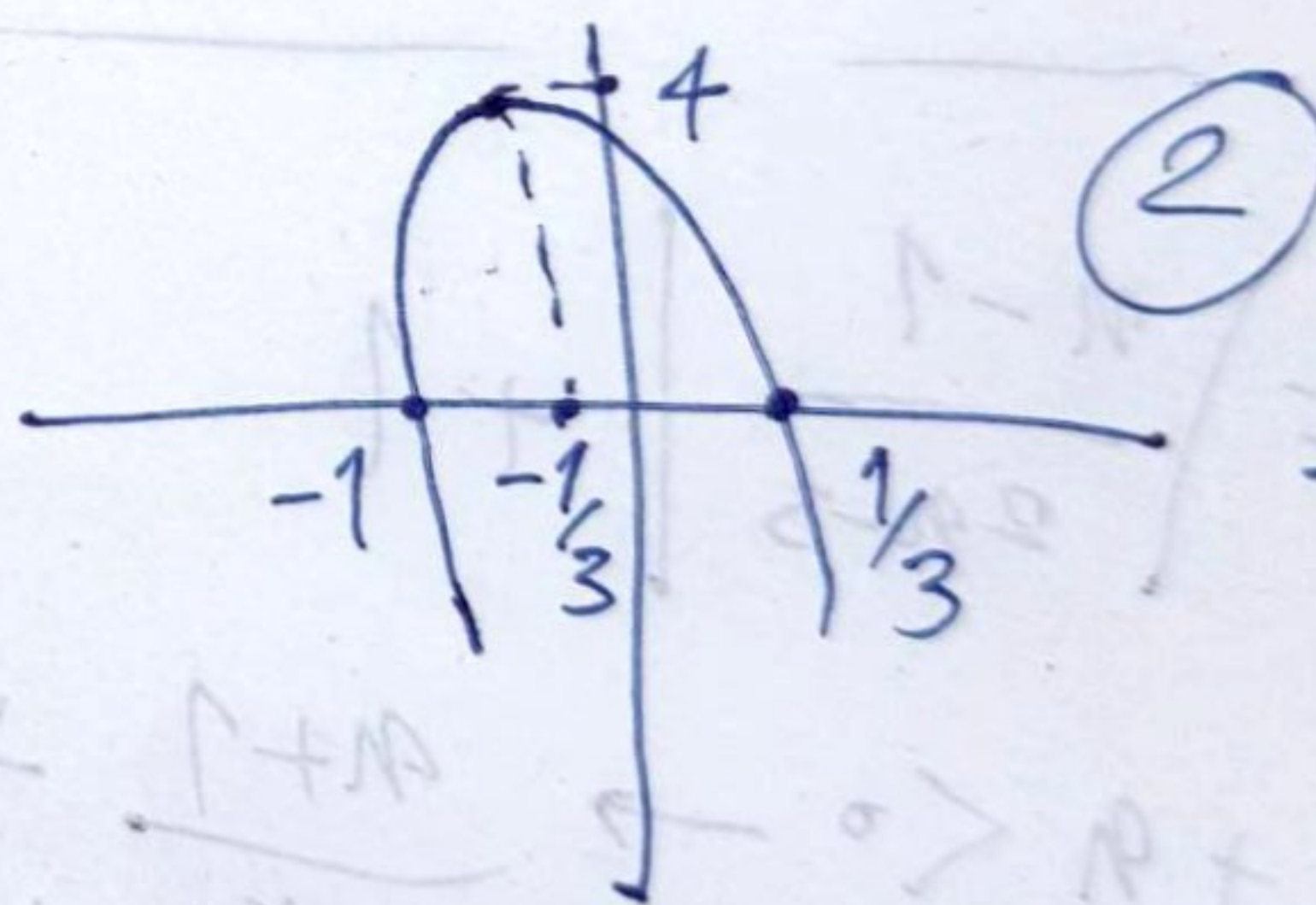
⑦

$$f(x+2)$$



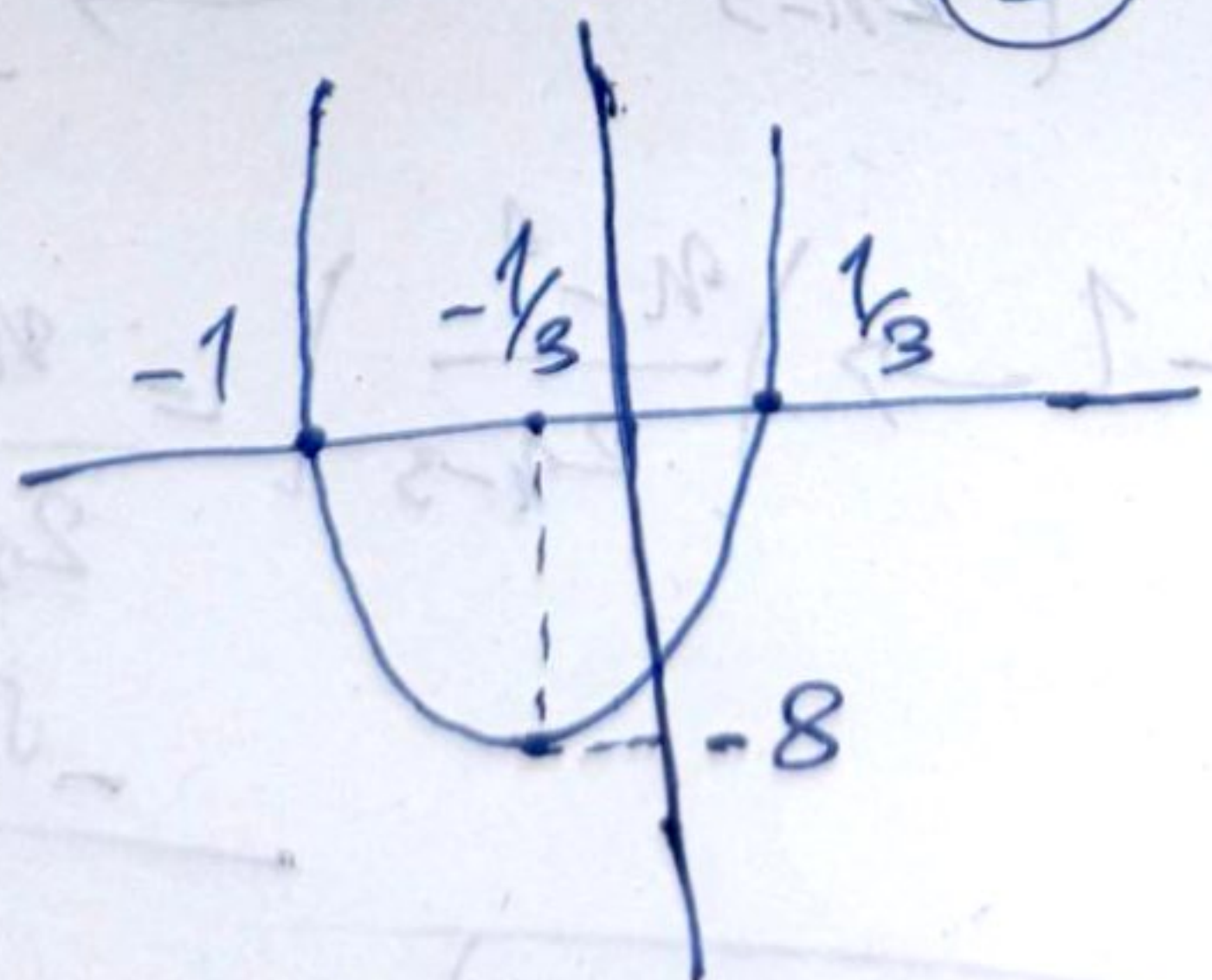
①

$$f(3x+2)$$



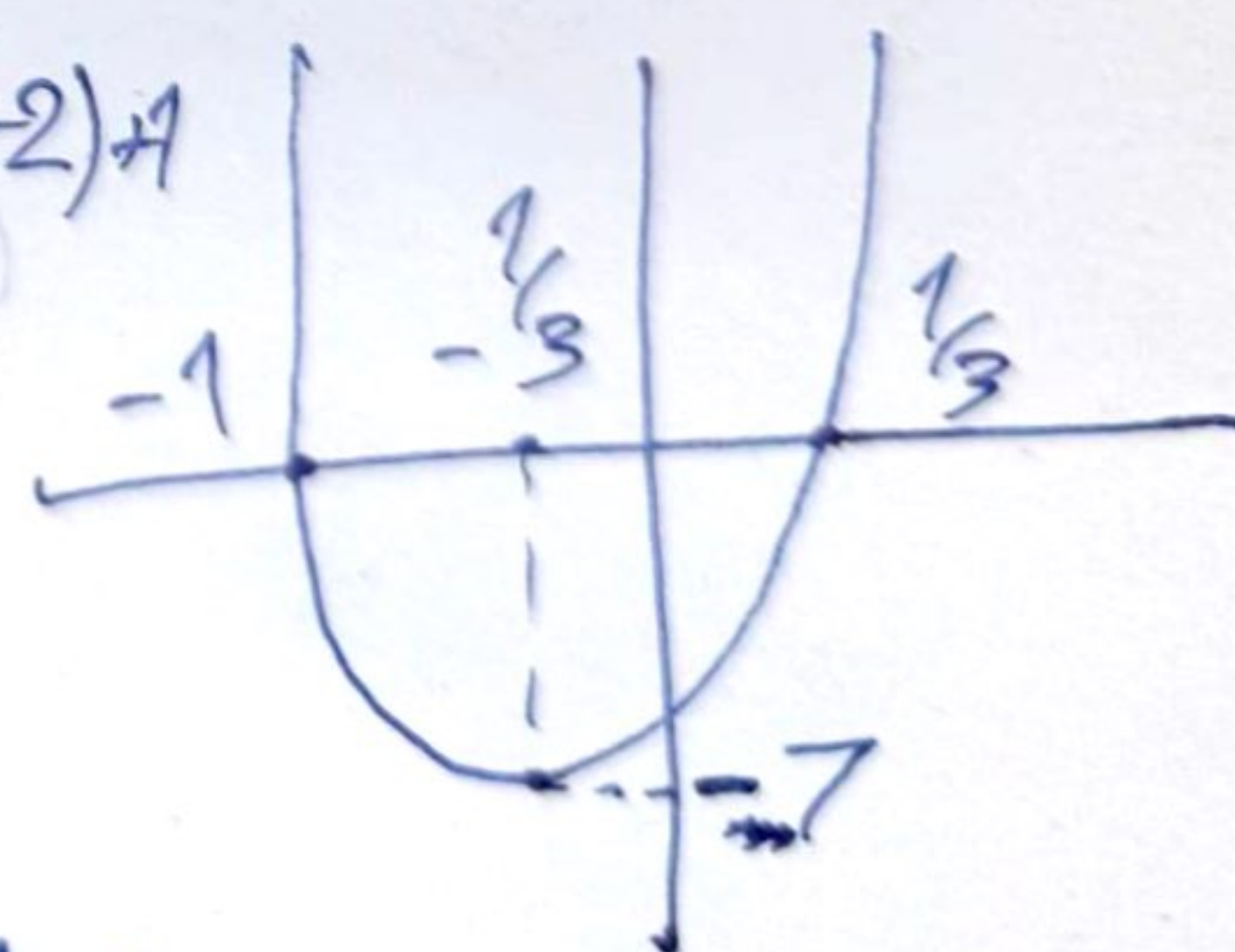
②

$$-2f(3x+2)$$



③

$$-2f(3x+2)+1$$



$$\frac{7}{3} = \alpha \beta \quad \Leftarrow A(-\frac{1}{3} \cdot 9 - 7)$$

$$\textcircled{1} \quad a+1 \leq f(a-1) \leq 5$$

$$\textcircled{2} \quad -2 \leq g(a+1) \leq b-1 \Rightarrow D_1 + D_2 = (-2, 5) \Rightarrow$$

$$a-b? \Rightarrow -3-6 = -9$$

$$(a+1) \cap [2] = (-2) \Rightarrow a = -3$$

$$[5] \cap (b-1) = (5) \Rightarrow b = 6$$

$$Dg_1 = [-3, 5] \rightarrow -\frac{3}{2} \leq \frac{x}{2} \leq \frac{5}{2} \rightarrow -\frac{1}{2} \leq \frac{x}{2} + 1 \leq \frac{7}{2} \quad (9)$$

$$Rg_1 = [-1, 2] \rightarrow -2 \leq 2f(x) \leq 4 \rightarrow -5 \leq 2f(x) - 3 \leq 1$$

$$Dg_2 \rightarrow |2f(x) - 3| > 0 \quad \text{مقدار مثبت} \Rightarrow Dg_2 = [-\frac{1}{2}, \frac{7}{2}]$$

$$Rg_2 \rightarrow \sqrt{[-5, 1]} \rightarrow \sqrt{[0, 5]} \rightarrow Rg_2 = [0, \sqrt{5}]$$

$$g(x) = \left| \frac{x-1}{2x-3} \right| + 1$$

$$g(x) + x < 0 \rightarrow \frac{x+1}{\text{مقلوب}} + \left| \frac{x-1}{2x-3} \right| < 0 \rightarrow \frac{2x^2 - 4}{2x-3} < 0$$

$$\hookrightarrow x < -1 \rightarrow \left| \frac{x-1}{2x-3} \right| = \frac{x-1}{2x-3}$$

$$\frac{-\sqrt{2}}{2} \quad -1 \quad \sqrt{2} \quad 1.5$$

$$\boxed{x < -\sqrt{2}}$$