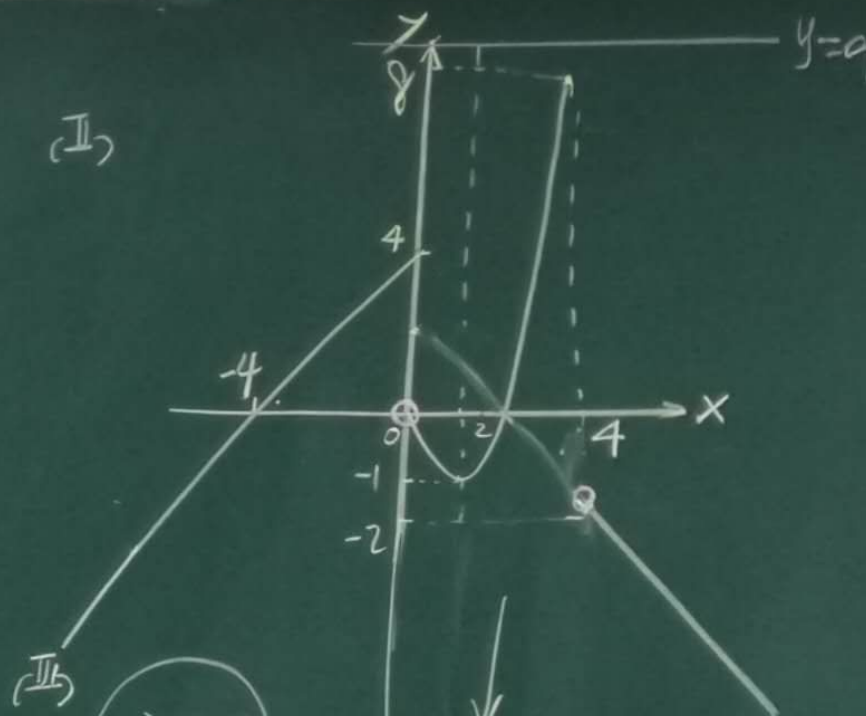


分段函数.

$$f(x) = \begin{cases} x+4 & (x \leq 0) \\ x^2-2x & (0 < x \leq 4) \\ -x+2 & (x > 4) \end{cases}$$

$$\begin{aligned} \text{(I)} \quad & f[f(f(5))] \\ &= f[f(-3)] \\ &= f(1) \\ &= 1^2 - 2 \times 1 = -1 \end{aligned}$$

(II)



(III)

方程 $f(x) - a = 0$ ~~Am~~
 $f(x) = a$
 $y = f(x)$ 与 $y = a$ 的交点

$(-\infty, 8]$

$$x = [x] \quad \text{取整函数}$$

$[x]$ 不超过 x 的最大整数

$$[1.3] = 1$$

$$[3.4] = 3$$

$$[-3.4] = -4$$

$$f(x) = \frac{x^2}{2x^2 - 2x + 1} \quad (x \geq \frac{1}{3})$$

$\frac{1}{+\infty} \rightarrow 0$ $[\frac{1}{3}, +\infty)$
 $+\infty$

$$= \frac{1}{\frac{1}{x^2} - \frac{2}{x} + 2} = \frac{1}{t^2 - 2t + 2} \quad \text{令 } t = \frac{1}{x} \in [1, 3]$$

$$f(x) \in [\frac{1}{5}, 1] = \frac{1}{M} \quad \Rightarrow M = t^2 - 2t + 2 \in [1, 5]$$

$$y = [f(x)] \quad \text{in } \mathbb{N} \quad \{0, 1\}$$

$(\frac{1}{5}, 1)$