



数学I

第3章 2次関数

絶対値のグラフ



(2x)

$$y = |x+1| + |x-3|$$

-	-	+	$ x-3 $
-	+	+	$ x+1 $
	-1	3	x

(i) $x \leq -1$ or $x \geq 3$

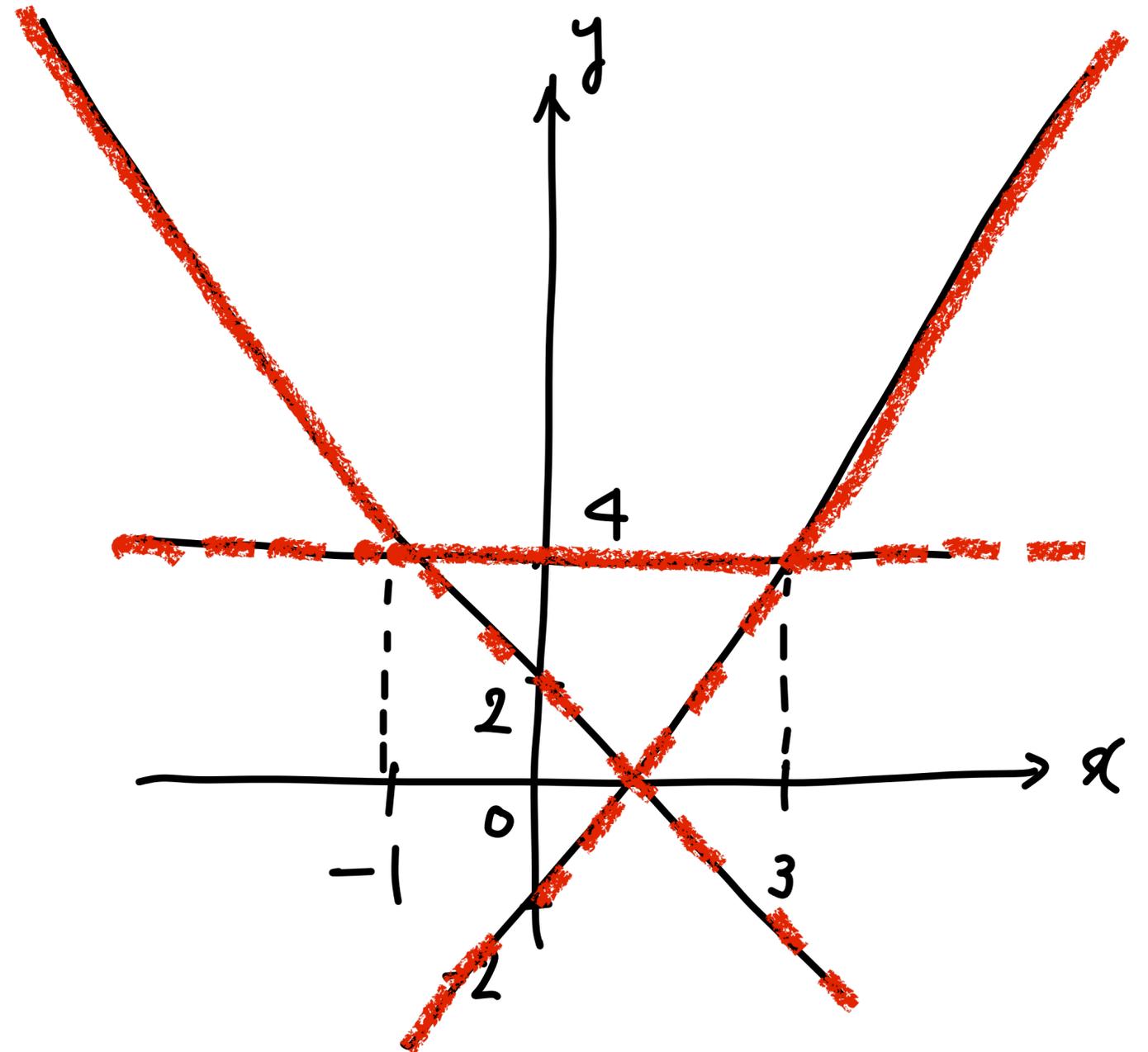
$$y = -(x+1) - (x-3) = -2x+2$$

(ii) $-1 < x \leq 3$ or $x \geq 3$

$$y = x+1 - (x-3) = 4$$

(iii) $x > 3$ or $x \leq -1$

$$y = x+1 + x-3 = 2x-2$$



(2x)

$$y = |x^2 - 2x|$$

$$(i) \quad x^2 - 2x \geq 0 \quad \text{a.e.}$$

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

$$x \leq 0, \quad 2 \leq x \quad \text{a.e.}$$

$$y = x^2 - 2x$$

$$= (x-1)^2 - 1$$



$$(ii) \quad x^2 - 2x < 0 \quad \text{a.e.}$$

$$x(x-2) < 0$$

$$0 < x < 2 \quad \text{a.e.}$$

$$y = -(x^2 - 2x)$$

$$= -\{(x-1)^2 - 1\}$$

$$y = -(x-1)^2 + 1$$

