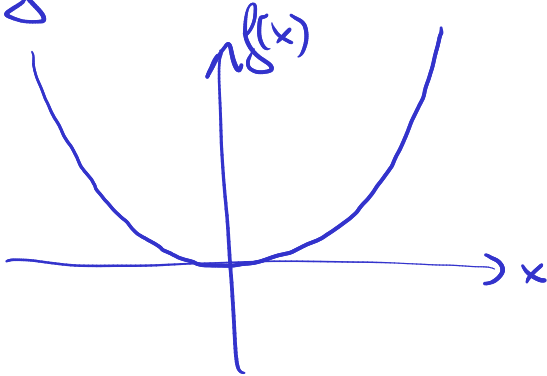


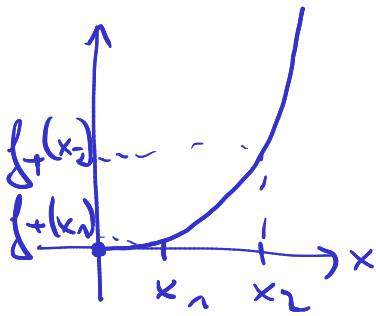
440

$$f: \mathbb{R} \rightarrow \mathbb{R}, x \mapsto x^2$$



$$\begin{aligned} f(x) &= y \\ \Leftrightarrow x^2 &= y \end{aligned}$$

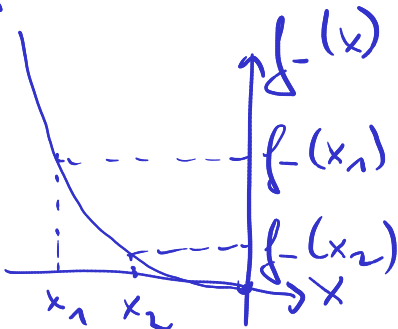
$$f_+ : [0, \infty) \rightarrow \mathbb{R}, f_+(x) := x^2$$



$$\begin{aligned} f_+(x) &= y \\ \Leftrightarrow x^2 &= y \Leftrightarrow |x| = \sqrt{y} \\ (x \geq 0) \Leftrightarrow x &= \sqrt{y} \end{aligned}$$

$$\text{also } f_+^{-1}(y) = \sqrt{y}$$

$$f_- : (-\infty, 0] \rightarrow \mathbb{R}, f_-(x) := x^2$$



$$\begin{aligned} f_-(x) &= y \\ \Leftrightarrow x^2 &= y \Leftrightarrow |x| = \sqrt{y} \\ (x \leq 0) \Leftrightarrow -x &= \sqrt{y} \Leftrightarrow x = -\sqrt{y} \end{aligned}$$

$$\text{also } f_-^{-1}(y) = -\sqrt{y}$$