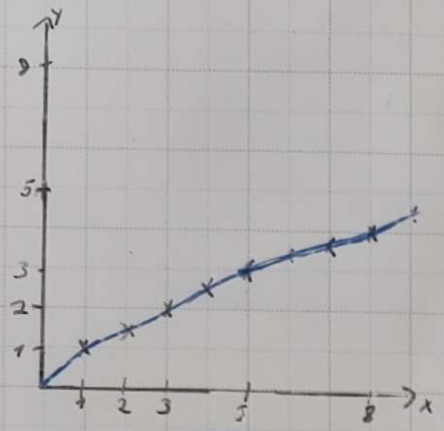
1.25 Graph einer Abbildung

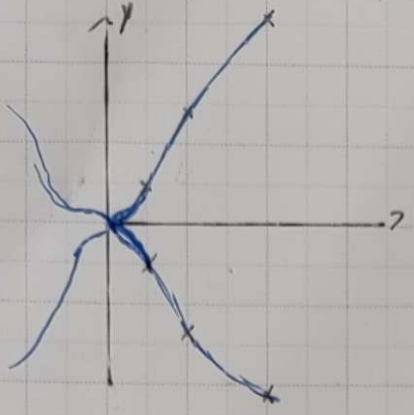
$f: D \to Z \quad \{(x,y) \in D \times Z \mid y = f(x)\}$

a) $R = \{(x,y) \in \mathbb{R}^2 \mid x^2 = y^3\}$



$f(x) = y = \sqrt[3]{x^2}$
es ist ein Graph

b) $R = \{(x,y) \in \mathbb{R}^2 \mid x^3 = y^2\}$

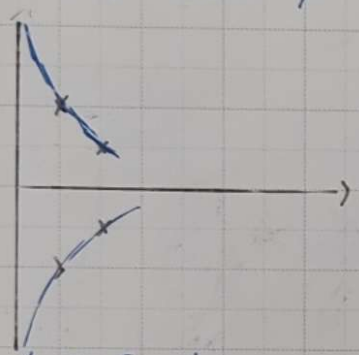


kein Graph

c) $R = \{(x,y) \in \mathbb{R} \times \mathbb{R}_{\geq 0} \mid x^3 = y^2\}$

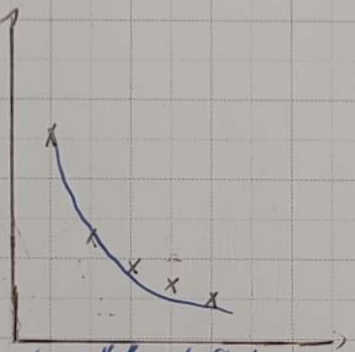
- $\sqrt{-x}$ existiert auf $\mathbb{R}$ nicht
- kein Graph

d) $R = \{(x,y) \in \mathbb{R}^2 \mid x^2 + y^2 = 5\}$



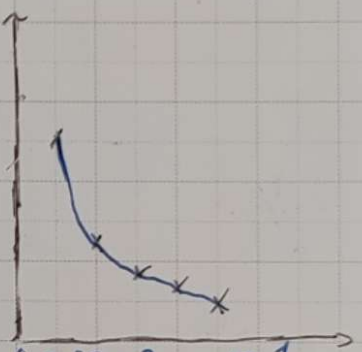
kein Graph

e) $R = \{(x,y) \in \mathbb{R} \setminus \{0\} \times \mathbb{R} \mid y = \frac{1}{x}\}$



- $\frac{1}{0}$ nicht definiert
- kein Graph

f) $R = \{(x,y) \in \mathbb{R} \setminus \{0\} \times \mathbb{R} \mid y = \frac{1}{x}\}$



$f: \mathbb{R} \setminus \{0\} \to \mathbb{R}, \; x \mapsto \frac{1}{x}$