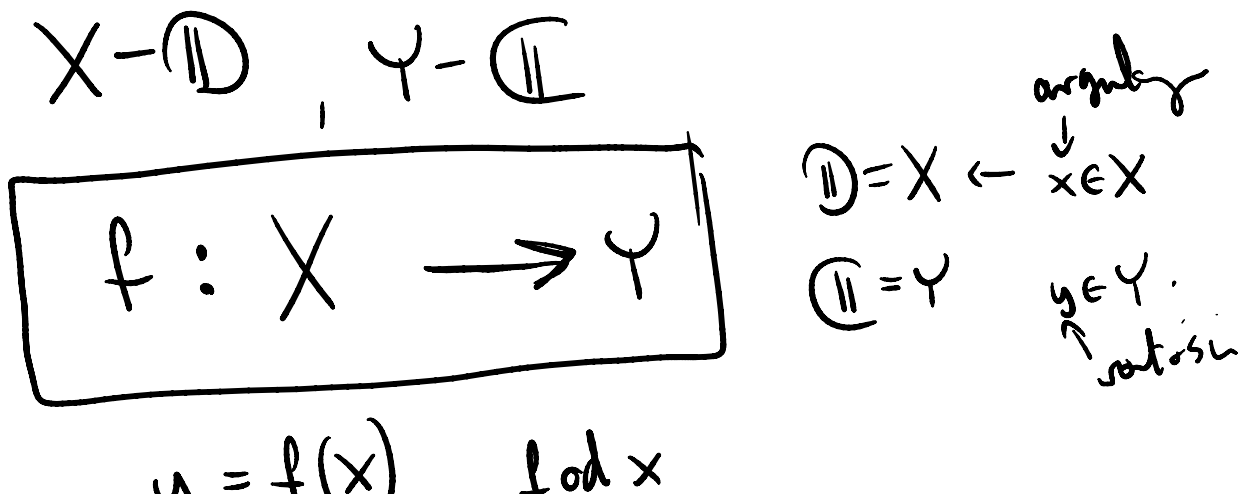
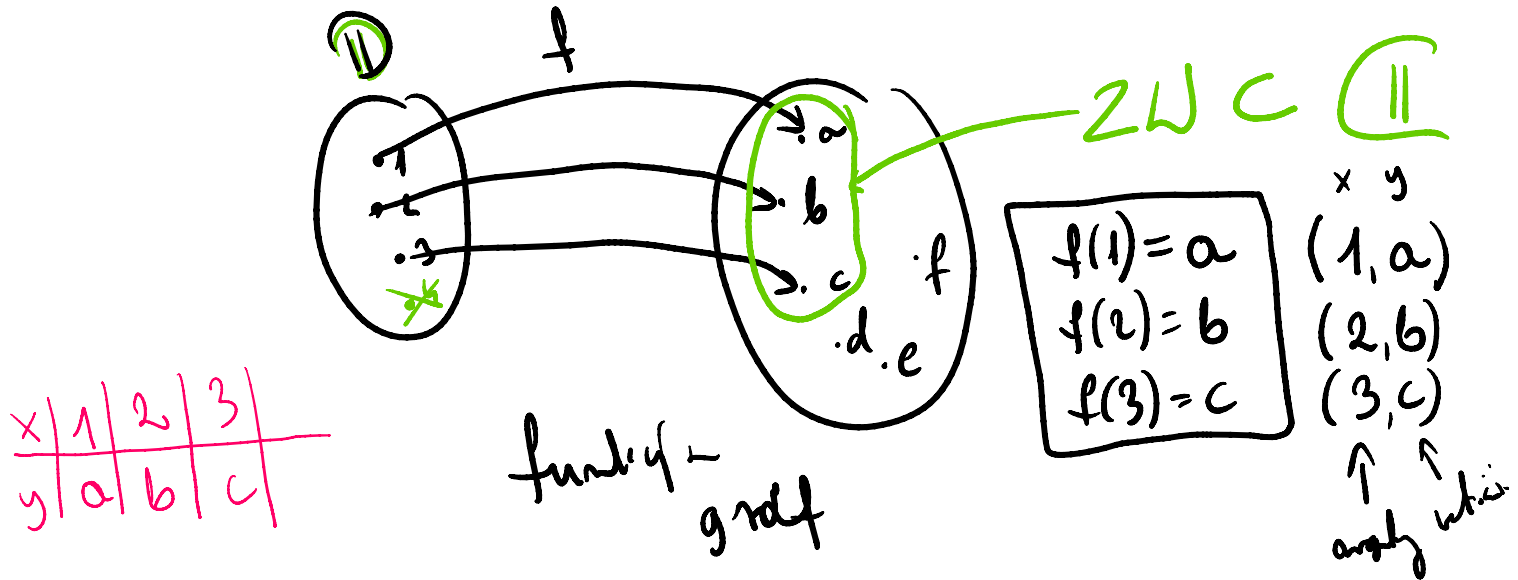
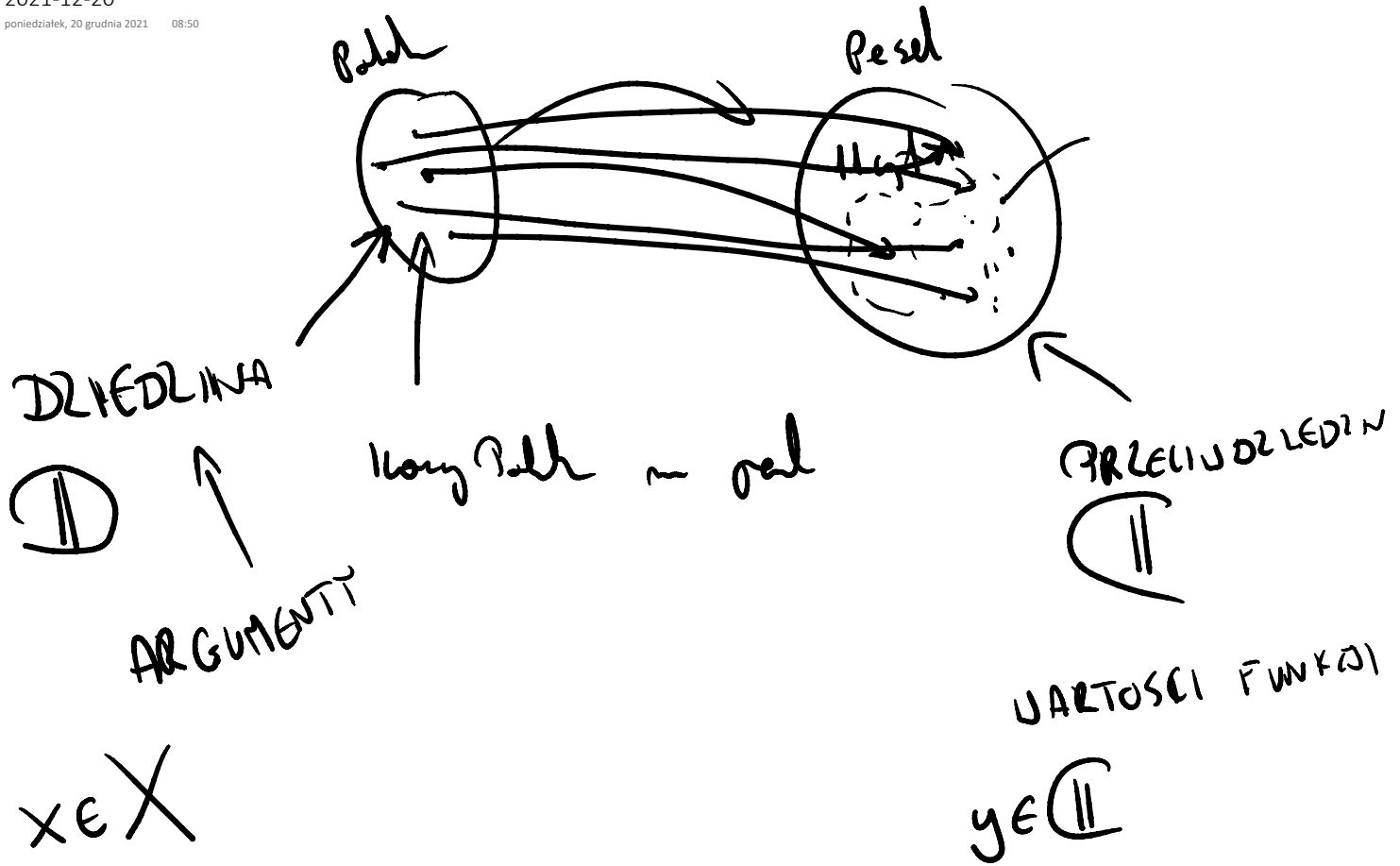




$$y = f(x) \quad \text{for } x$$

graf, tabelle, zahlen paar, propri's story, leben, leylhen

folgende li'store $X \subset \mathbb{R}, Y \subset \mathbb{R}$

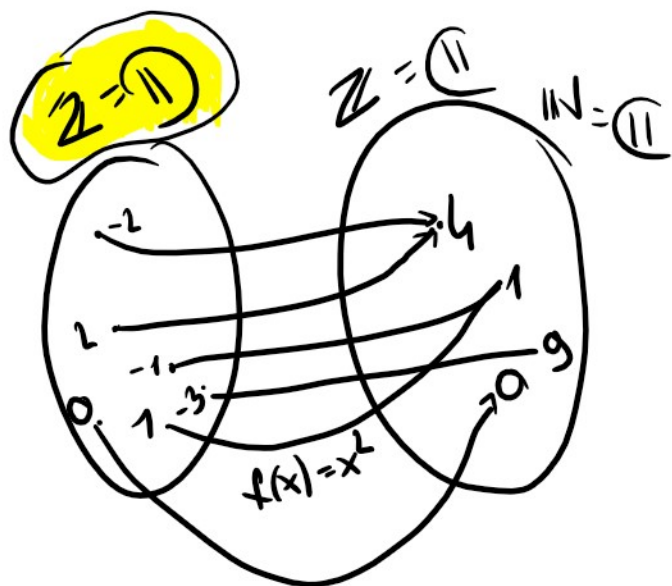
3.2 b

$$-2 \longrightarrow (-2)^2 = 4$$

$$2 \longrightarrow (2)^2 = 4$$

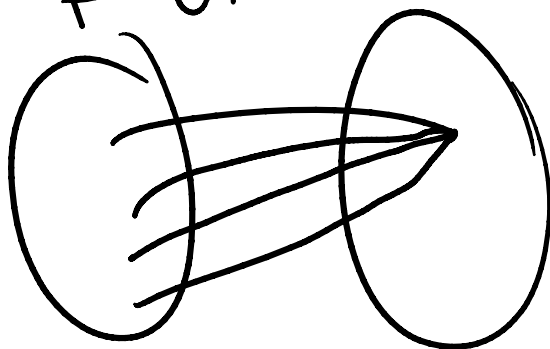
$$0 \longrightarrow 0^2 = 0$$

$$\begin{array}{l} \text{for } x \\ f(x) = x^2 \\ \mathbb{D}: x \in \mathbb{Z} \end{array} \quad y = x^2$$

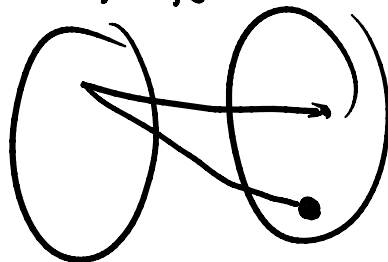


$$\begin{array}{l} f(\underline{x}) = \underline{x}^2 \\ \rightarrow f(-2) = (-2)^2 \quad f(\text{flower}) = \text{flower}^2 \\ \rightarrow \begin{pmatrix} x & y \\ -2 & 4 \end{pmatrix} \\ f(2) = 2^2 = 4 \quad (2, 4) \end{array}$$

f. OK



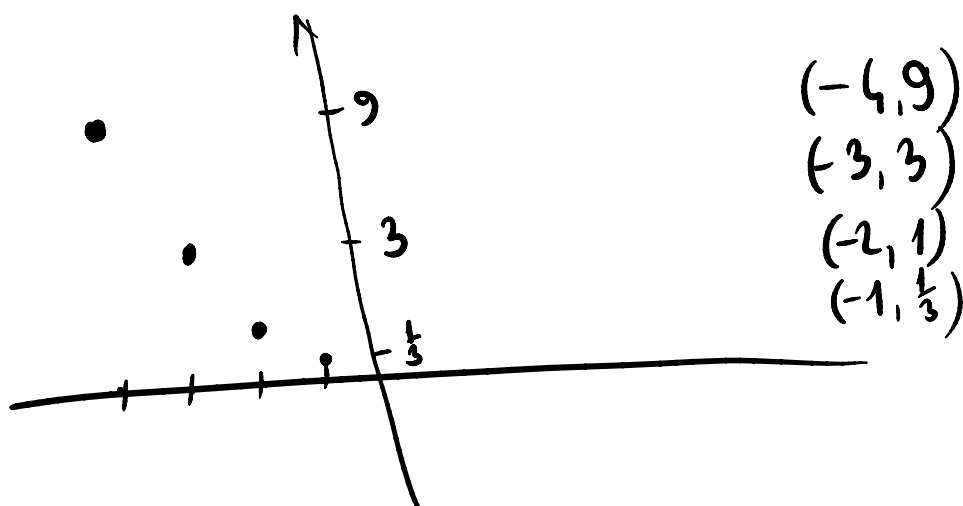
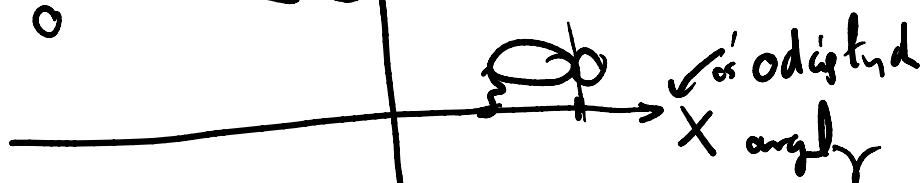
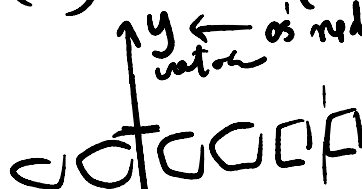
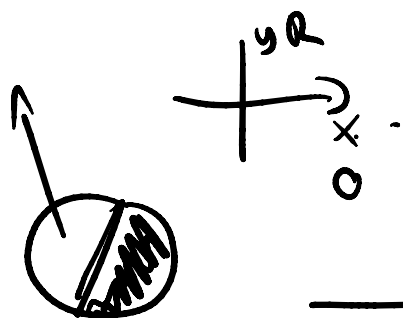
f. NIE



3.6, a, b

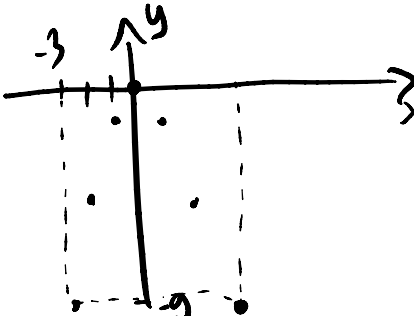
$$f(-2) = \left(\frac{1}{3}\right)^{-2+2} = \left(\frac{1}{3}\right)^0 = 1$$

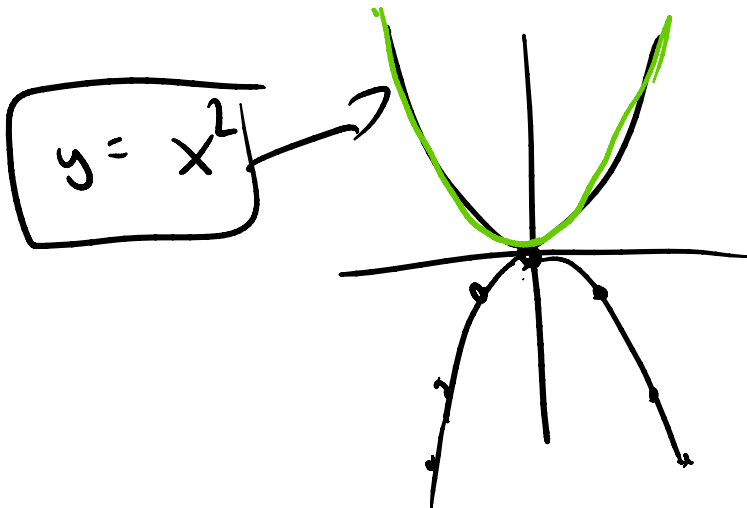
$$\begin{array}{c|c} x & -2 \\ \hline y & 1 \end{array}$$



$$a) \quad \begin{aligned} g(-2) &= -4 \\ g(2) &= -4 \end{aligned} \quad \bigg| \quad b) \quad g(-1) = -1$$

c)  $g(x) = -x^2$ $\Leftrightarrow \underline{g(x) = -(x^2)}$





11: $x \in \{-3, -2, -1, 1, 2, 3\}$

$f(x) = |x|$

f od x

f od x →

3. 19 a)

$$h(x) = 2(x+3) \quad \mathbb{D}: x \in \mathbb{Z} \leftarrow$$

b)

$$h(-51) = 2(-51+3) = -96$$

c)

$$h(x) = 8 \Leftrightarrow 2(x+3) = 8 \quad | :2$$

$$\begin{array}{l} x+3=4 \\ \boxed{x=1} \Rightarrow \boxed{h(1)=8} \\ 1 \in \mathbb{Z} \end{array}$$

d)

$$h(x) = 5 \Leftrightarrow 2(x+3) = 5 \quad | :2$$

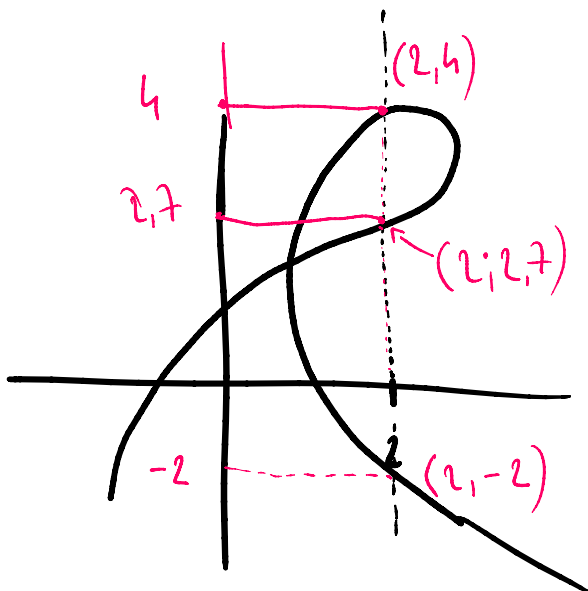
$$x+3 = 2,5$$

$$x = -0,5 \notin \mathbb{Z}$$

$\Rightarrow 5$ nie należy do $2\mathbb{N}$.

DEF wykresu funkcji.

Wykresem funkcji f nazywamy zbiór
Wszystkich punktów płaszczyzny o
współrzędnych $(x; f(x))$, gdzie x jest
elementem dziedziny, a $f(x)$ wartością
funkcji dla argumentu x .



dl $x=2$

$y_1 =$
 y_2
 y_3

1. Wyznacz dziedzinę funkcji:

a) $f(x) = \sqrt{|x-2|+2-x} + \frac{1}{x^2-1}$

b) $f(x) = \sqrt{2-x} + \sqrt{4-x^2}$

c) $f(x) = \sqrt{2-x} + \sqrt{4-x^2} + |x|$

d) $f(x) = \sqrt{2-x} + \sqrt{x-2}$

e) $h(x) = \frac{1}{\sqrt{3-|x-1|}} + \frac{2}{x(x+3)(x+2)}$

f) $h(x) = \sqrt{-9x^2 + 12|x| - 4}$

g) $h(x) = \frac{1}{\sqrt{x-|x|}}$

h) $h(x) = \frac{1}{\sqrt{|x-3|+3-x}}$

2. Wyznacz zbiór wartości funkcji:

a) $f(x) = x^2 + 3$

b) $g(x) = -|x| + 1$

c) $h(x) = \sqrt{x-2}$

d) $f(x) = \frac{1}{x}, x \in (1; \infty)$

e) $g(x) = \sqrt{4-x^2} + \sqrt{x-2} + \sqrt{5}$

f) $f(x) = -\sqrt{x^2}$

g) $g(x) = 2x + 1, x \in \langle -1; 2 \rangle$

h) $f(x) = \sqrt{x^{1998} - 1} + \sqrt{1 - x^{1998}}$