

Compunerea functifor.

$$A \xrightarrow{f} B \xrightarrow{g} C$$
 $g \circ f : A \rightarrow C$, $(g \circ f)(x) - g(f(x))$, $\forall x \in A$.

Ex. 1.3.37/ Sã se precizere daca wom. comp.: fog si got sunt def. si M car afin. det. compusa.

2.)
$$f: \mathbb{R} \rightarrow [0, \infty), f(x) = |x|$$

$$g: \mathbb{R} \rightarrow \mathbb{R}, g(x) = \frac{1}{x}.$$

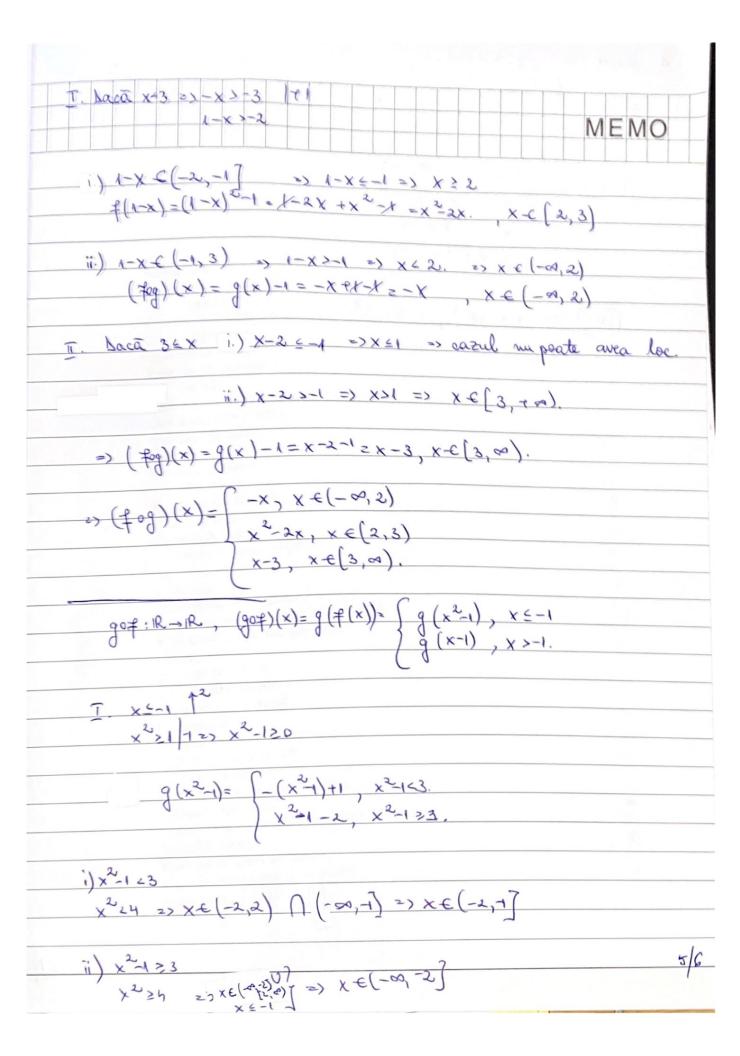
a.) fog:
$$|N^* \rightarrow [o, \infty)$$
, $(fog)(x) = f(g(x)) = f(\frac{1}{x}) = |\frac{1}{x}|$.

got nu este definita.

3.) fog:
$$[0, \infty) \rightarrow [0, \infty)$$
, $\{fog\}(x) - f(g(x)) = f(\sqrt{x}) = x+1$.
 $g\circ f: [R \rightarrow IR, (g\circ f)(x) - g(f(x)) = g(x^2+1) = \sqrt{x^2+1}$.

1.)
$$f, g: \mathbb{R} \to \mathbb{R}, f(x) = \begin{cases} x^2 - 1, & x \le -1 \\ x - 1, & -1 < x \end{cases}$$
 $g(x) = \begin{cases} -x + 1, & x < 3 \\ x - 2, & 3 \le x \end{cases}$

fg, gof:
$$|R \rightarrow |R$$
.
 $(fg)(x) = f(g(x)) = \begin{cases} g^{2}(x) - 1, g(x) & 1 \\ g(x) - 1, g(x) & 1 \end{cases}$.



$$g(x-1) = \begin{cases} -(x-1)+1, & x-1 < 3. \\ x-1-2, & x-1 \geq 3 \end{cases} = \begin{cases} 2-x, & x < 4 \\ x-3, & x \geq 4 \end{cases} \cap (-1, x) \times \epsilon[u, x)$$

$$g(x) = \begin{cases} x^{2}-3, & x \in (-\infty, -\infty) \\ 2-x^{2}, & x \in (-2, -1] \\ 2-x, & x \in (-1, 4) \\ x-5, & x \in (u, \infty). \end{cases}$$