

Probl. 1 Skizzen? • *Esquisses?*

(a) $f(x) = x^2 + \sin(x)$

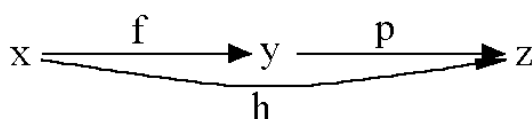
(b) $f(x) = [x^2] + 1$

(c) $f(x) = \sin([x^2 + 1]) - 1$

Probl. 2 $x = 4 + \frac{4}{4 + \frac{4}{4 + \frac{4}{\ddots}}} \stackrel{?}{=} \frac{p}{q}, \quad p, q \in \mathbb{N}$

$x = 5 + \frac{3}{3 + \frac{3}{3 + \frac{3}{\ddots}}} \stackrel{?}{=} \frac{r}{s}, \quad = ?$

Probl. 3



$f(x) = \arccos(x) = y$

$h(x) = p(f(x)) = p(y) = y^2 - 2y + 2 = z$

$h(x) = (p \circ f)(x)$

(a) $h(x) \rightsquigarrow$ Diagramm?

$h(x) \rightsquigarrow$ • *Diagramme?*

(b) $D_h = ?$, $W_h = ?$

(c) $h(o) = ?$, $h(1) = ?$

Probl. 4 $f(x) = x^2 + x + \frac{1}{4}$, $g(x) = x^2 - x$

(a) Nullstellen von $h(x) = f(x) \cdot g(x)$? • *Zéros de $h(x) = f(x) \cdot g(x)$?*

(b) $u(x) = \frac{1}{f(x) - g(x)} \rightsquigarrow$ i. Diagramm? • *Diagramme?*
ii. Pole? • *Pôles?*

Probl. 5 $h(x) = \frac{f(x)}{g(x)} + x$

$f(x), g(x) \rightsquigarrow$ Probl. 4

(a) Diagramm? • *Diagramme?*

(b) Verhalten für grosse $|x|$?
• *Comportement pour des $|x|$ qui sont grands?*

Probl. 6 $f(x) = e^{-x^2}$, $g(x) = x$

(a) Diagramm? • *Diagramme?*

(b) $f(x) = g(x) \rightsquigarrow x \approx ?$

(c) $m \leq f(x) \leq M \rightsquigarrow m = ?$, $M = ?$

(d) $f(0) = ?$, $f(\ln(e)) = ?$, $f(1) = ?$

Probl. 7 $3^x = 2^{2x} \cdot e^3 \cdot 3^{-2x} \rightsquigarrow x = ?$