Übungen in Analysis ◇ Exercices en analyse ◇ Type I1 ◇ I / 8

Probl. 1 $f(x) = e^{(x^2 - \cos(2\,x))} \rightsquigarrow$ f gerade/ ungerade? • f *paire/ impaire?*

Probl. 2 $f(x) = y = e^{-x^2}$

(a) $x \geq 0 \rightsquigarrow$ $f^{-1}(x) = ?$ Skizze! • *Esquisse!*

(b) $f^{-1}(0.5) \approx ?$

Probl. 3 $\log(x^2) + \log(\frac{1}{x}) - \log(x) = ?$

Probl. 4 $\sin(x + \frac{\pi}{3}) = \sin(x) \cdot (?) + \cos(x) \cdot (?)$

(a) $\sin(x + \frac{\pi}{3}) = \sin(x) \cdot (?) + \cos(x) \cdot (?)$

(b) $\tan(x + \frac{\pi}{3}) = \ldots ? \ \ldots$

Probl. 5 $r(\varphi) = 1 + \cos(\frac{\varphi}{2}) \rightsquigarrow$ Polar... Skizze! • *Polaire... esquisse!*

Probl. 6 $2 \cdot 3^x = 5^x \rightsquigarrow$ $x = ?$

Probl. 7 $0.367\overline{367}\ldots = \frac{p}{q}, \ p, q \in \mathbb{N} \rightsquigarrow$ $p, q = ?$

Probl. 8 $\langle a_n \rangle = \langle \frac{\sin(3\,\pi + \frac{4}{5}\,n^2)}{n^2} \rangle \rightsquigarrow$ $a_n \to ?$

Probl. 9 $\langle a_n \rangle = \langle \frac{n^2 - 2\,n + 5}{n^3 + n^2 + 1} \rangle \rightsquigarrow$ $a_n \to ?$

Probl. 10 $\langle a_n \rangle = \langle \frac{ln(n)}{n^2} \rangle \rightsquigarrow$ $a_n \to ?$
Hinweis: Skizze! • *Indication: Exquisse!* $\rightsquigarrow$ $ln(n), \ n$

Probl. 11 $\langle a_n \rangle = \langle (1 + \frac{1}{n} + \frac{1}{n^2}) \cdot (5 + \frac{2+n}{n}) \rangle \rightsquigarrow$ $a_n \to ?$

Probl. 12 $\langle a_n \rangle = \langle e^{\sin(\pi + \frac{1}{n})} \rangle \rightsquigarrow$ $a_n \to ?$