

Übungen in Analysis \diamond Exercices en analyse \diamond T. B2 \diamond I / 13

Probl. 1 $\langle a_n \rangle = \left\langle \frac{\sin^2 \varphi + \cos^2 \varphi + 3n}{4n} \right\rangle \rightsquigarrow a_n \rightarrow ?, \lim_{n \rightarrow \infty} a_n = ?$

Probl. 2 $\langle a_n \rangle = \left\langle \frac{6n^3 - 5n^2 + 2n - 6 + \frac{1}{n}}{2n^3 - 4n + 7 + \frac{8}{n^2}} \right\rangle \rightsquigarrow a_n \rightarrow ?, \lim_{n \rightarrow \infty} a_n = ?$

Probl. 3 $\langle a_n \rangle = \left\langle \frac{\cos^2(n) - \sin^3(n^2 - 4n + 1) + 8}{n^2 - \sin(\tan(n))} \right\rangle \rightsquigarrow a_n \rightarrow ?, \lim_{n \rightarrow \infty} a_n = ?$

Probl. 4 $\lim_{n \rightarrow 1} \frac{x^2 - 1}{x - 1} = ?$

Probl. 5 $\lim_{n \rightarrow 1} \frac{x^3 - 1}{x - 1} = ?$

Probl. 6 $\lim_{n \rightarrow 0} (x^2 - x) \cdot \frac{\sin(x)}{x^2 \cdot \cos(x)} = ?$

Probl. 7 $\lim_{n \rightarrow 0} \left(\frac{\tan(x)}{x} + (x - 1) \cdot (x + 1) \right) = ?$