

- Probl. 1**
- (a) $f(x) = \frac{x^2}{x^2 - \cos(x)}$,
 $I = [-2\pi, 2\pi]$ ○ Diagramme? • *Diagrammes?*
○ Pole • *Pôles*
- (b) $f(x) = [\cos(x)] + 1$,
 $I = [-2\pi, 2\pi]$ ○ Wo ist f nicht definiert? • *Où est-ce-que f n'est pas définie?*
- (c) $f(x) = x^2 + 1$,
 $I = [\pi, \pi]$ ○ Sprünge? • *Discontinuités?*
 $f(x) = e^{\ln(x^2+1)}$,
 $I = [\pi, \pi]$
- (d) $f(x) = \cos(e^{\ln(x^2+1)})$,
 $I = [\pi, \pi]$
- Probl. 2** $x = x^{3 \cdot \ln(x^2)} \rightsquigarrow x = ?$
- Probl. 3** $p(x) = (x-2) \cdot (x+1) \cdot (x^2-16)$, $h(x) = x^2 - 2x - 3$
 $f(x) = p(x) \cdot h(x)$, $g(x) = \frac{p(x)}{h(x)}$
- (a) Diagramm von f ? • *Diagramme de f ?*
(b) Pole von g ? • *Pôles de g ?*
- Probl. 4**
- (a) $\lim_{n \rightarrow \infty} \frac{(3n^2 - 3n + n^2 \cdot \sin(n)) \cdot n}{2n^2 + 4n^4} = ?$
- (b) $\lim_{n \rightarrow \infty} \frac{3n^2 - 3n + n^2 \cdot \sin(n)}{\cos(n) + 2n^2 + 4n^4} = ?$
- (c) $s_1 = \sum_{k=0}^{\infty} \frac{1}{5^k} = ?$, $s_1 = \sum_{k=0}^{\infty} \frac{4^k}{5^k} = ?$, $\rightsquigarrow \frac{s_2}{s_1} = ?$
- Probl. 5**
- (a) $s_3 = \sum_{k=0}^{\infty} \frac{1}{q^k} = 10 \Rightarrow q = ?$
- (b) $s_4 = \sum_{k=0}^{\infty} \frac{1}{q^k} = 1 \Rightarrow q = ?$