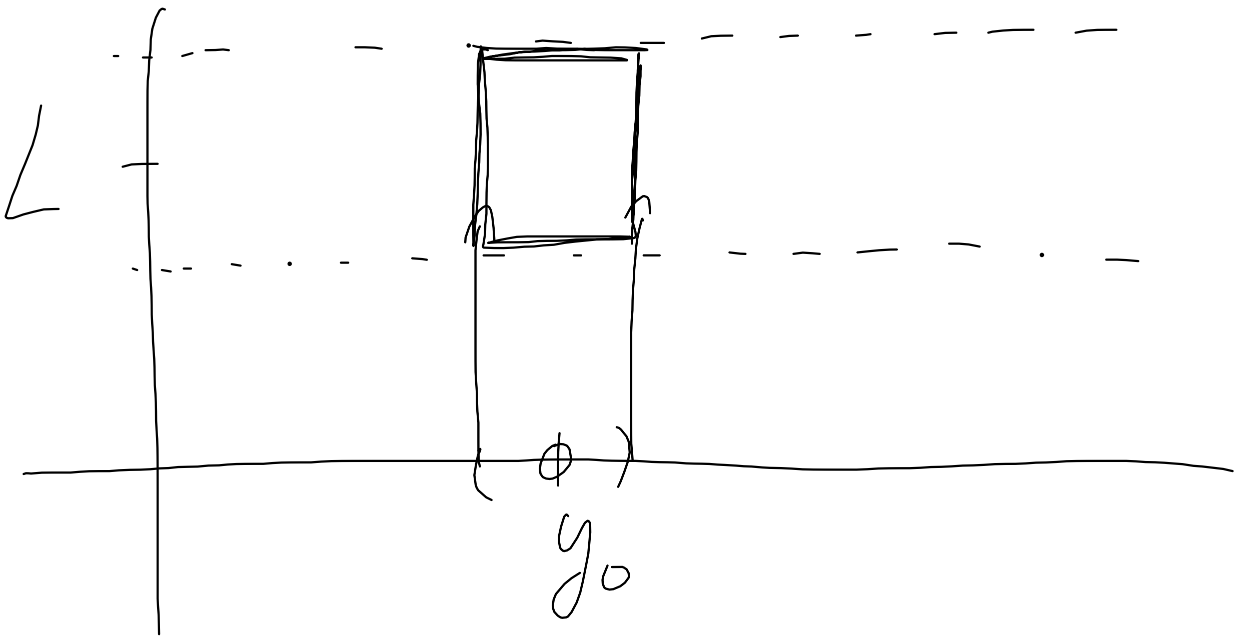
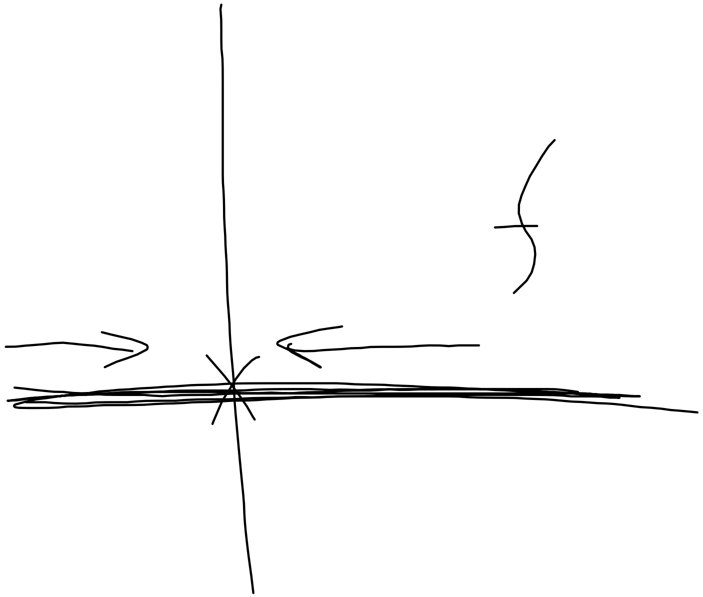
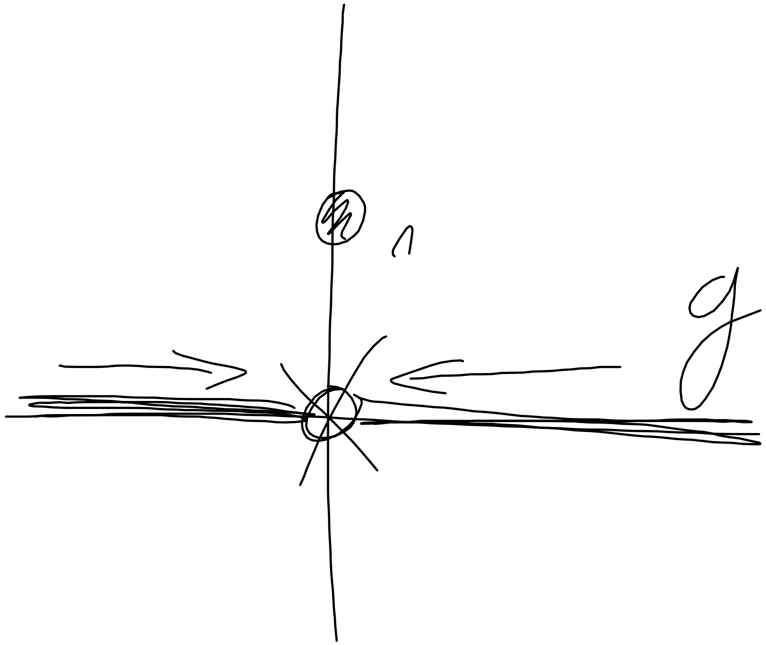
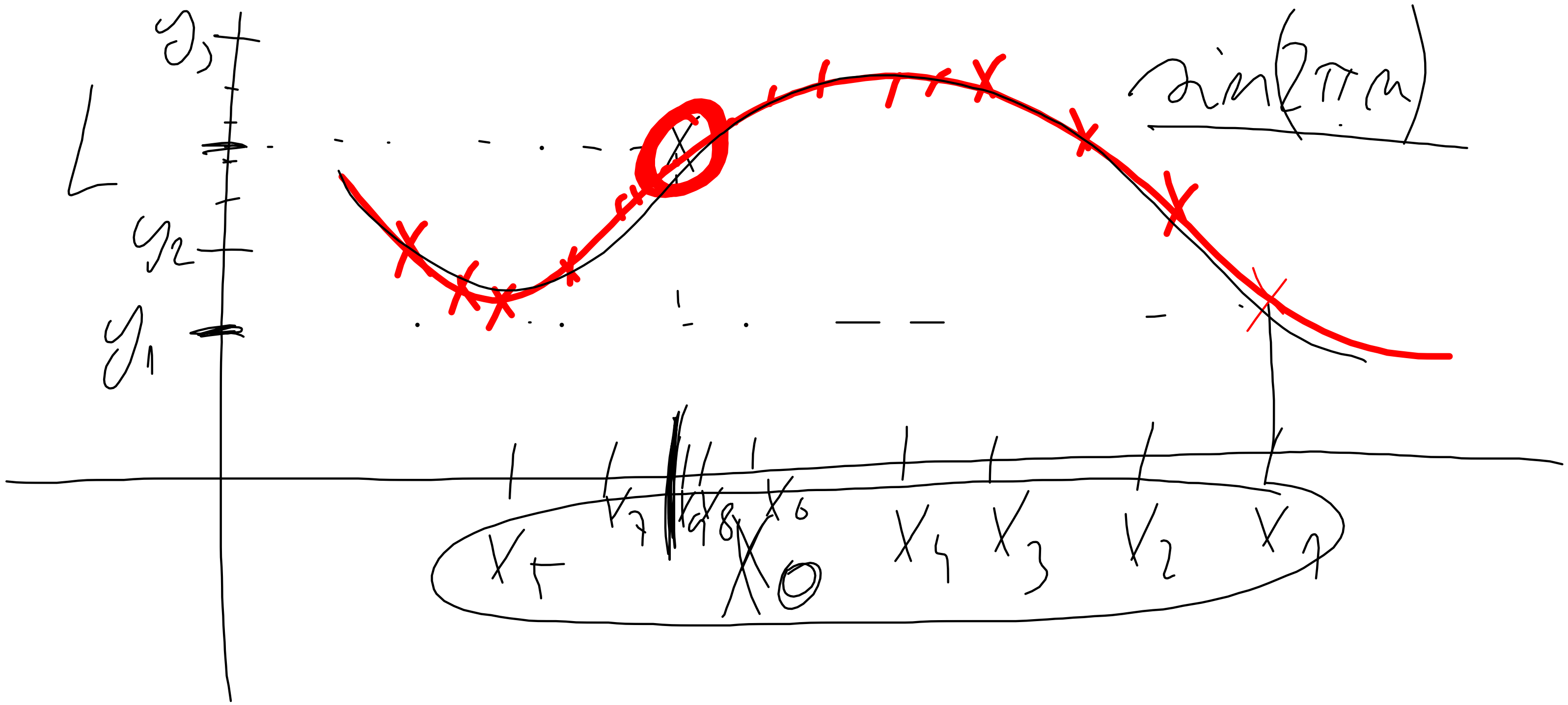
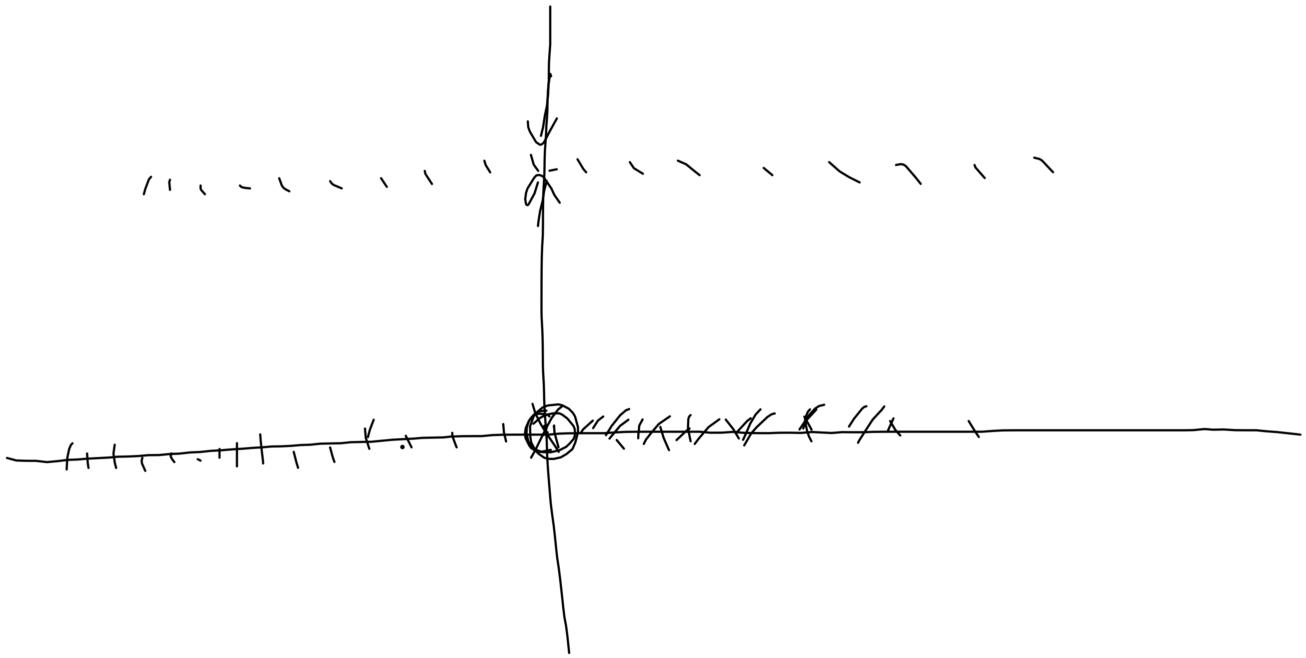

L
(ϕ)
y_0


f

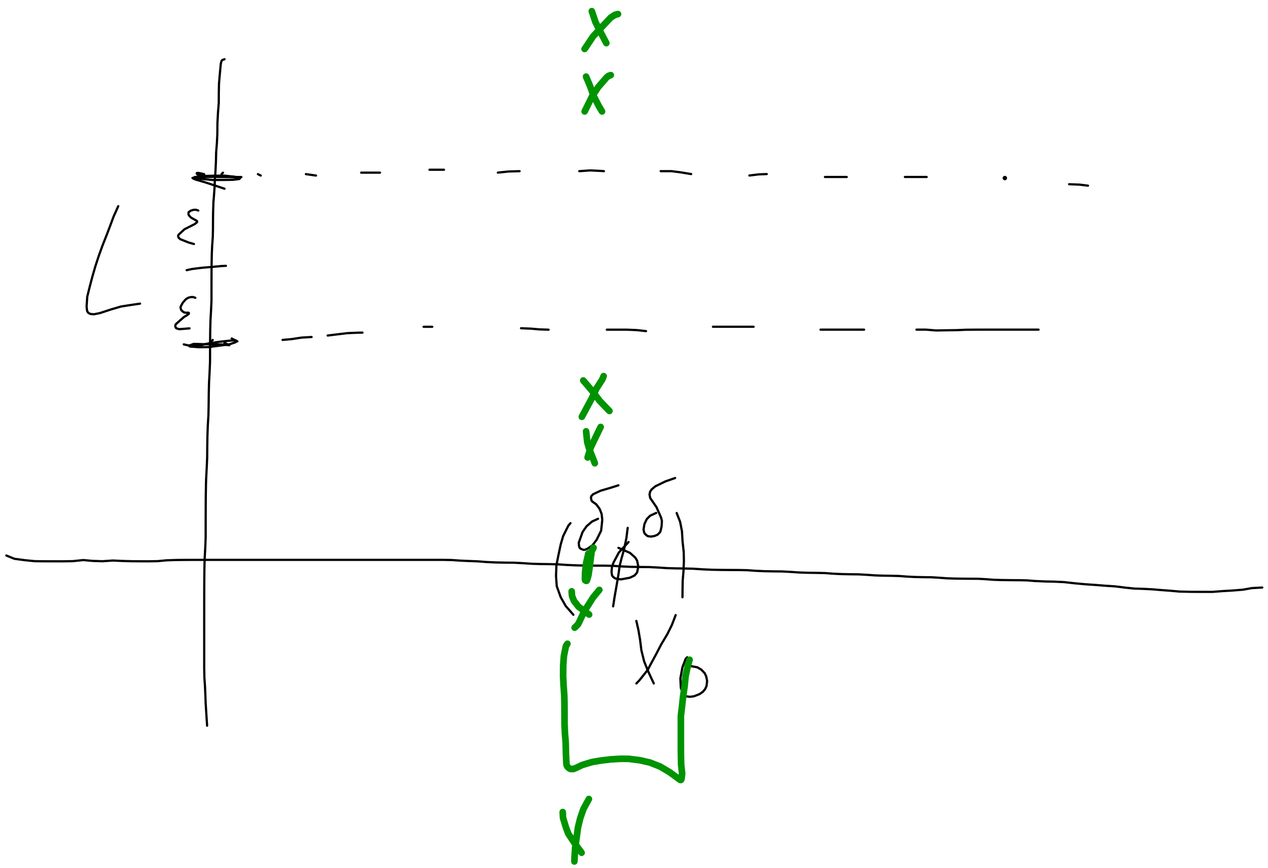

g

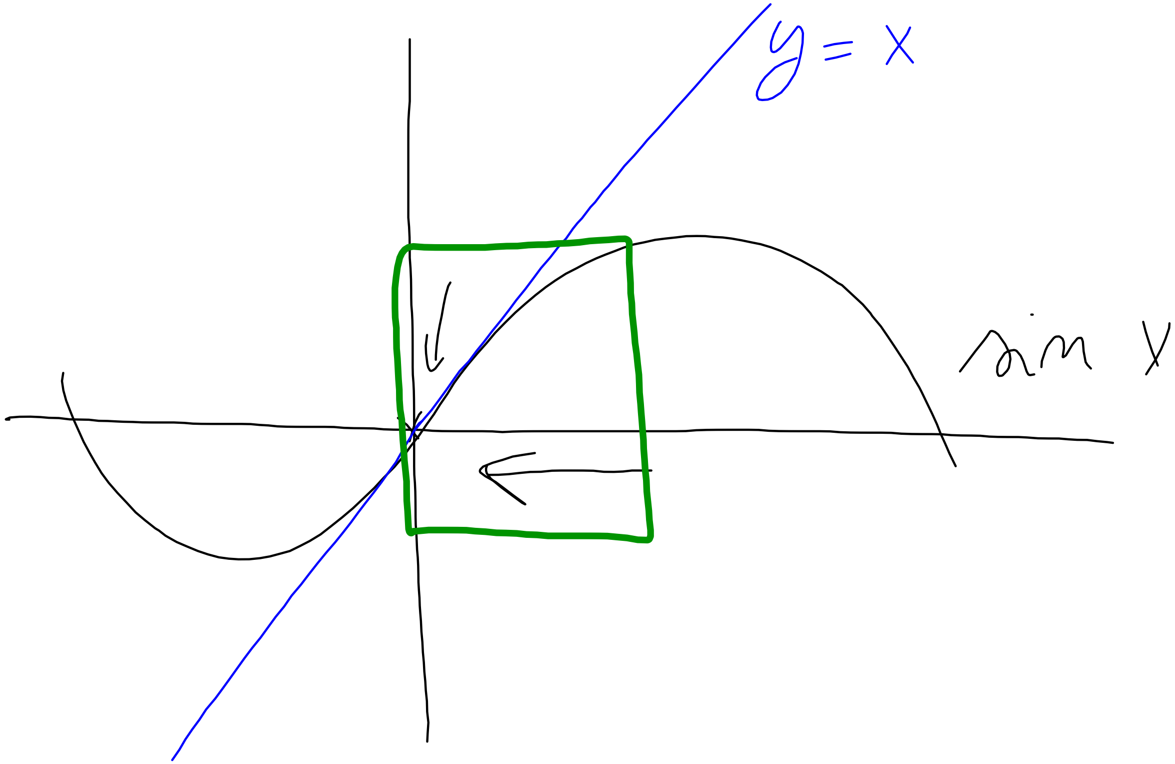


y_3
L
y_2
y_1
sin(2πx)
X_5
X_7
X_9
X_8
X_6
X_4
X_3
X_2
X_1
X_0



$$\neg(A \Rightarrow B) = A \wedge \neg B$$

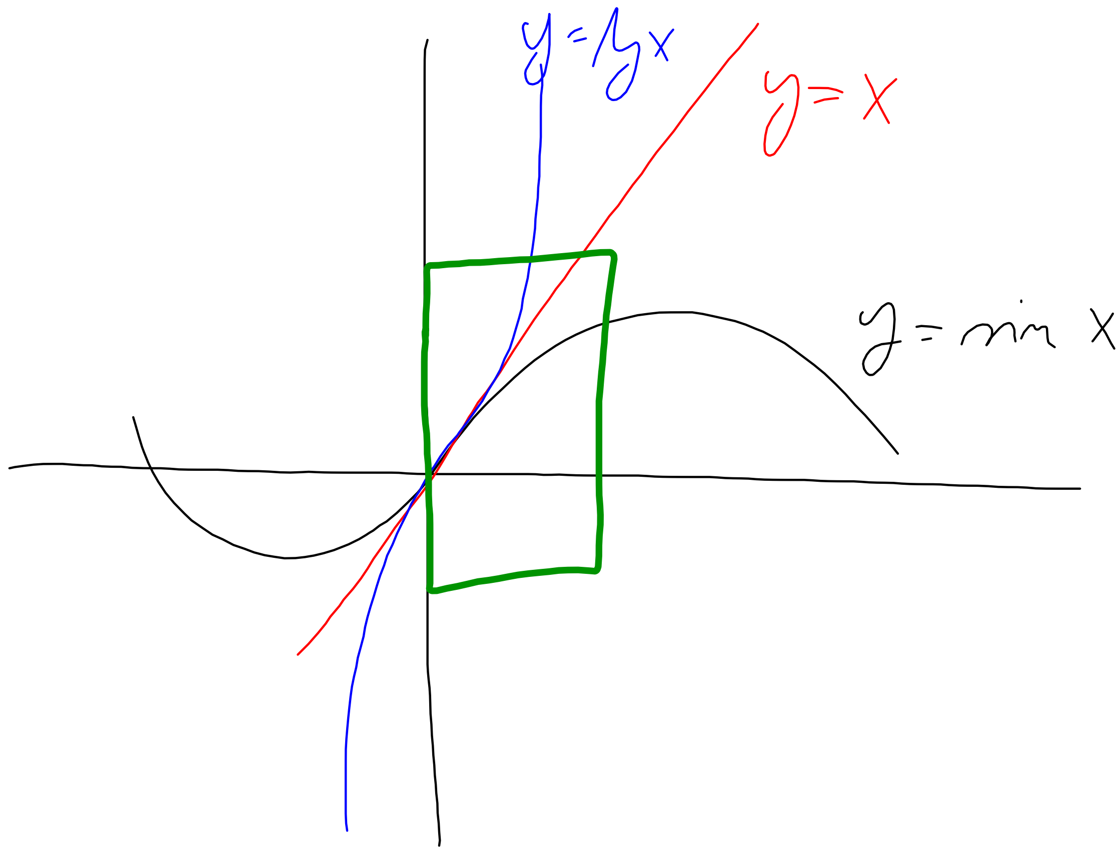

L
ε
ε
(δ, δ)
ϕ
X_ϕ

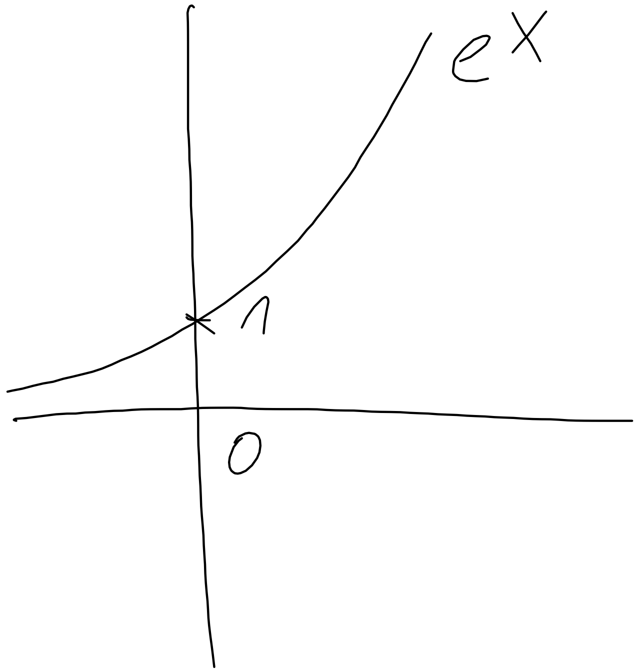


y = x
sin x

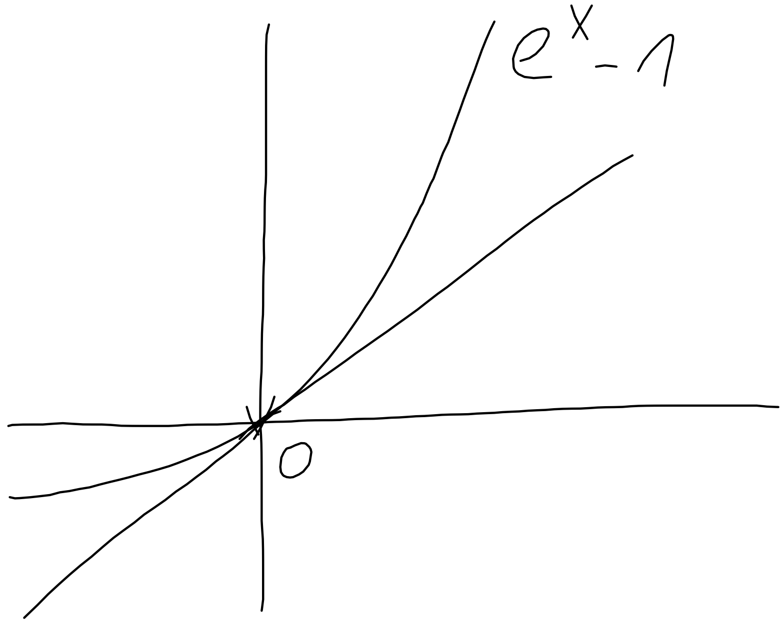
$$\cos 2t = \cos^2 t - \sin^2 t \quad \Big| \quad t = \frac{x}{2}$$

$$\sin^2 y + \cos^2 y = 1 \rightarrow \underline{\cos^2 y = 1 - \sin^2 y}$$


y = tan x
y = x
y = sin x



e^x
1
0



$e^x - 1$
0

$$\left(1+\frac{1}{n+1}\right)^{n+1} \nearrow e$$

$$\left(1+\frac{1}{n}\right)^{n\cancel{+1}} \searrow e$$

$$
\begin{array}{llcl}
n = 1 & \frac{1}{2} & < x \leq & 1 \\
2 & \frac{1}{3} & \text{~''~} & \frac{1}{2} \\
3 & \frac{1}{4} & \text{~''~} & \frac{1}{3} \\
4 & \frac{1}{5} & \text{~''~} & \frac{1}{4} \\
5 & \frac{1}{6} & \text{~''~} & \frac{1}{5} \\
\vdots & \vdots & & \vdots
\end{array}
$$

$$\frac{1}{n} > 0 \quad , \forall n \in \mathbb{N}$$

$$\frac{1}{n} \; , n \to \infty \qquad \frac{1}{n} \to 0$$

$$a^x = e^{\ln a^{x}} = e^{x \cdot \ln a}$$

$$\lim_{x \to 0} \frac{e^x - 1}{x} = 1$$

$$\lim_{x\to x_0}\frac{f(x)}{g(x)} = \left|\frac{0}{0},\ \frac{\infty}{\infty}\right| = \lim_{x\to x_0}\frac{f'(x)}{g'(x)}$$

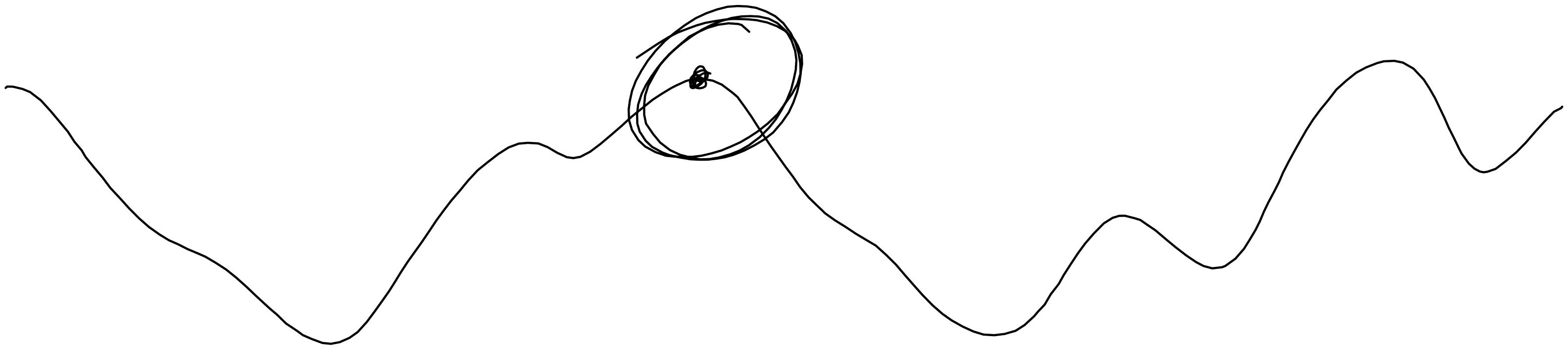
---

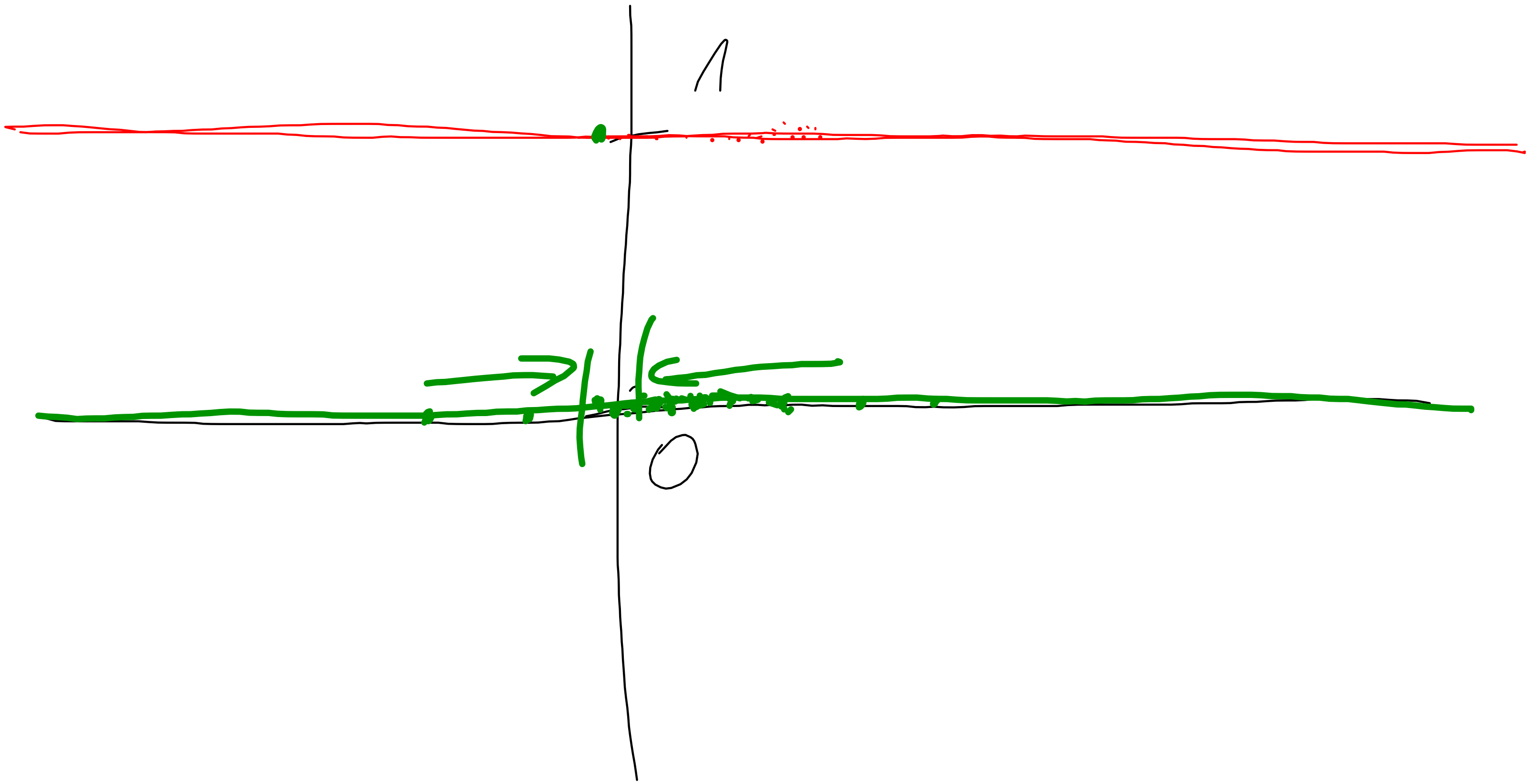
hEZ1 0a2

$$\cancel{\lim_{x\to\infty}\frac{x+\sin x}{x+\cos x} = \left|\frac{\infty}{\infty}\right| \overset{L'H}{=} \lim_{x\to\infty}\frac{1+\cos x}{1-\sin x}}$$

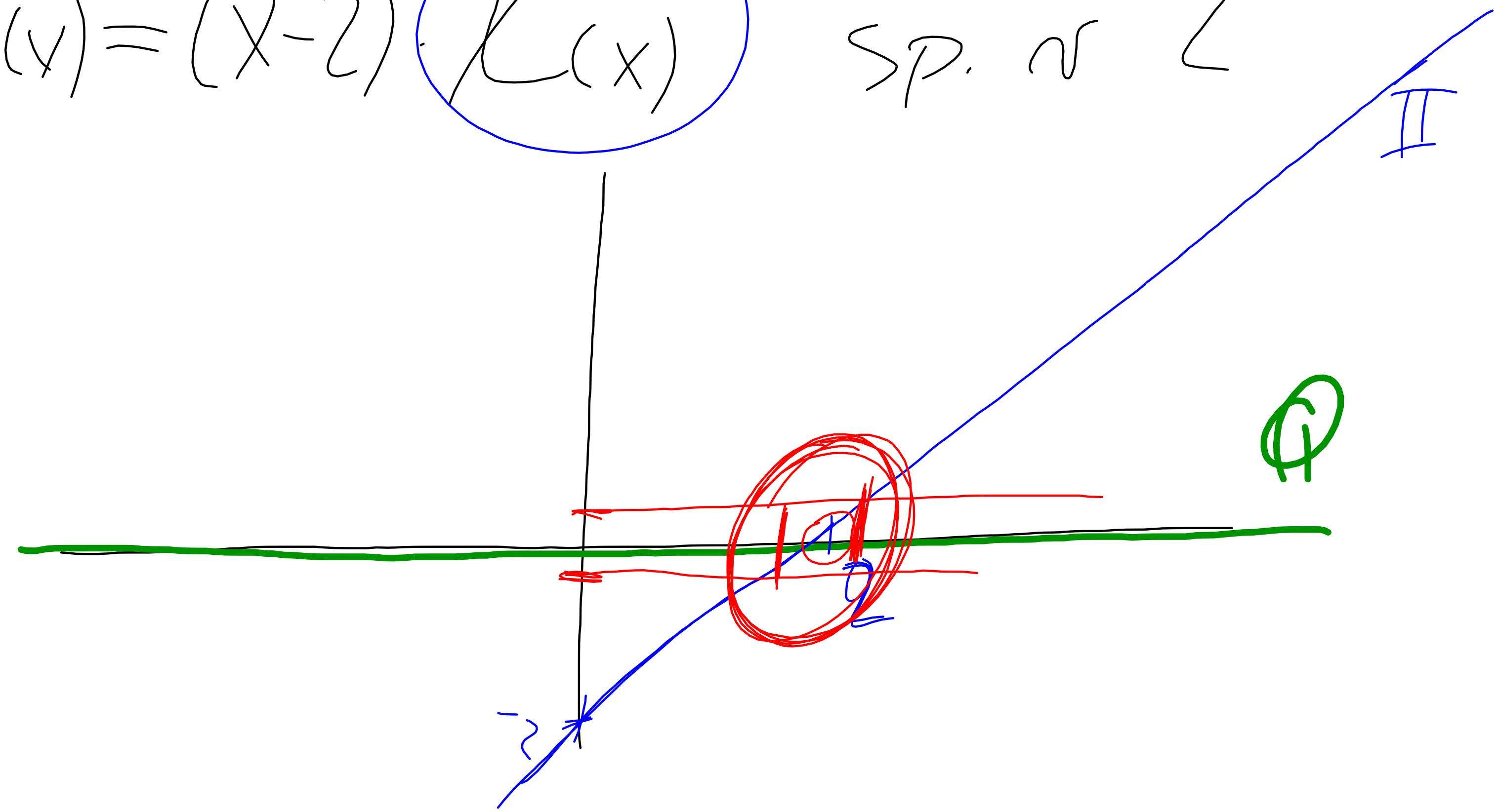
$$\lim_{x\to\infty} \frac{\cancel{x}\cdot\left(1+\frac{\sin x}{x}\right)}{\cancel{x}\cdot\left(1+\frac{\cos x}{x}\right)} = \lim_{x\to\infty} \frac{\underbrace{1}_{\to 1}+\underbrace{\frac{\sin x}{x}}_{\to 0}}{\underbrace{1}_{\to 1}+\underbrace{\frac{\cos x}{x}}_{\to 0}} = 1$$

$$\frac{\text{OHR.}}{\infty} \to 0$$




1
0

$f(x) = (x-2) \cdot \chi(x)$ $=1$ $(x \in \mathbb{I})$ sp. w 2



$$\lim_{x \to x_0} (\sin x) = \sin x_0$$

$$\lim_{x \to x_0} \left[(\sin x) - \sin x_0 \right] = 0$$

$$\lim_{x \to x_0} \sin x - \lim_{x \to x_0} \sin x_0$$