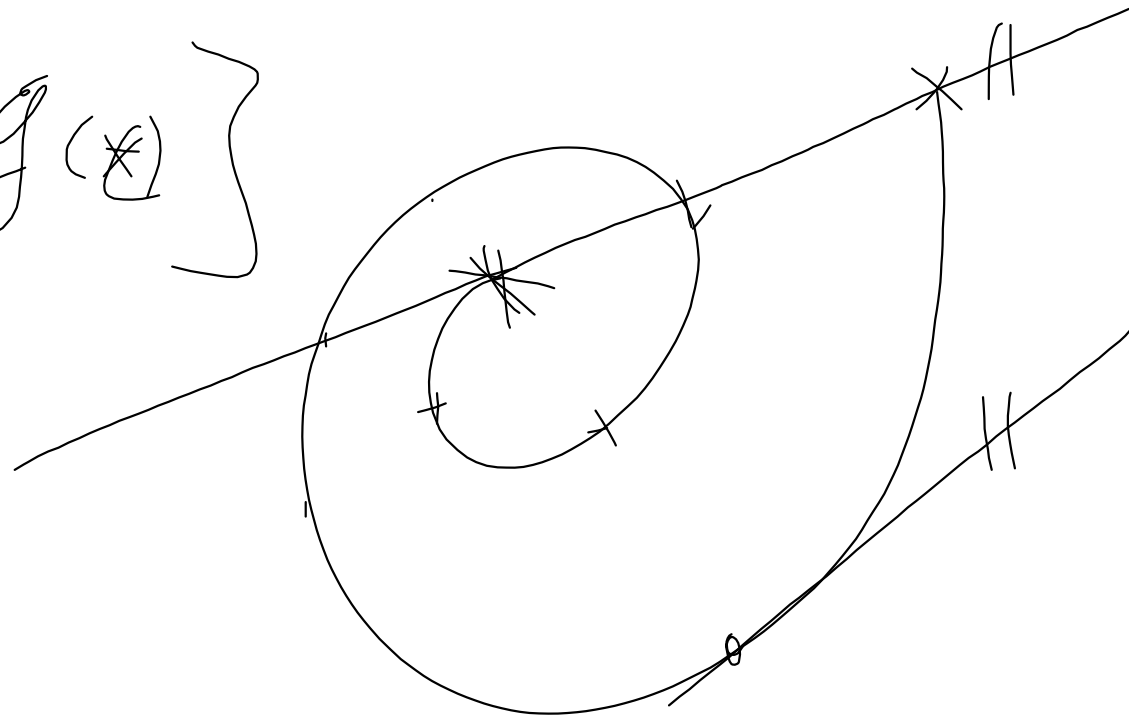
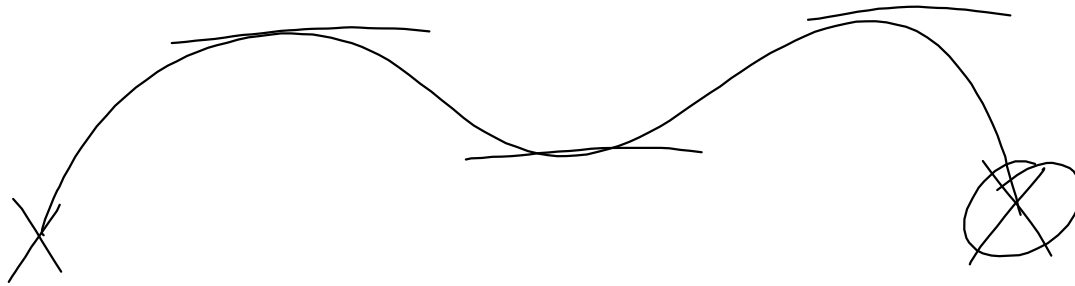
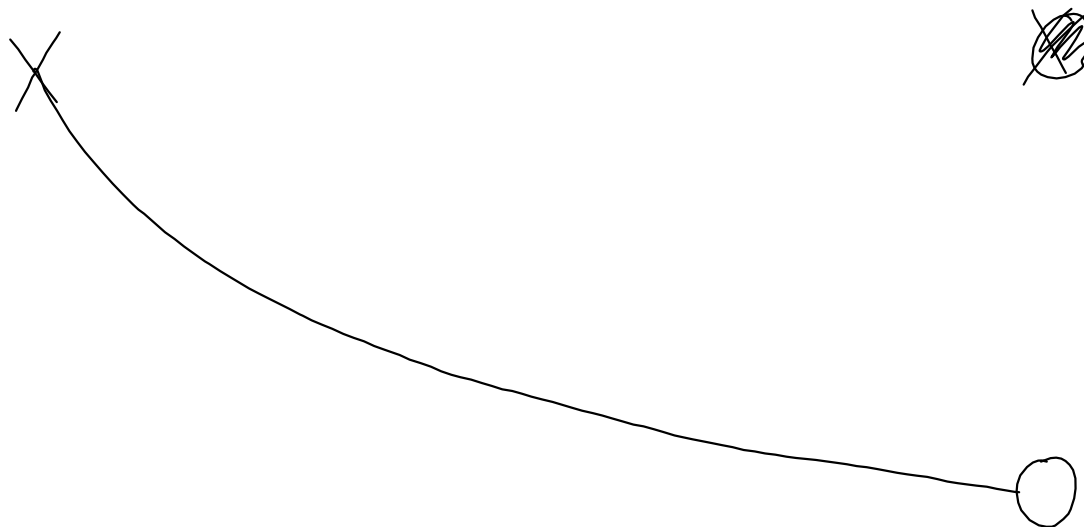
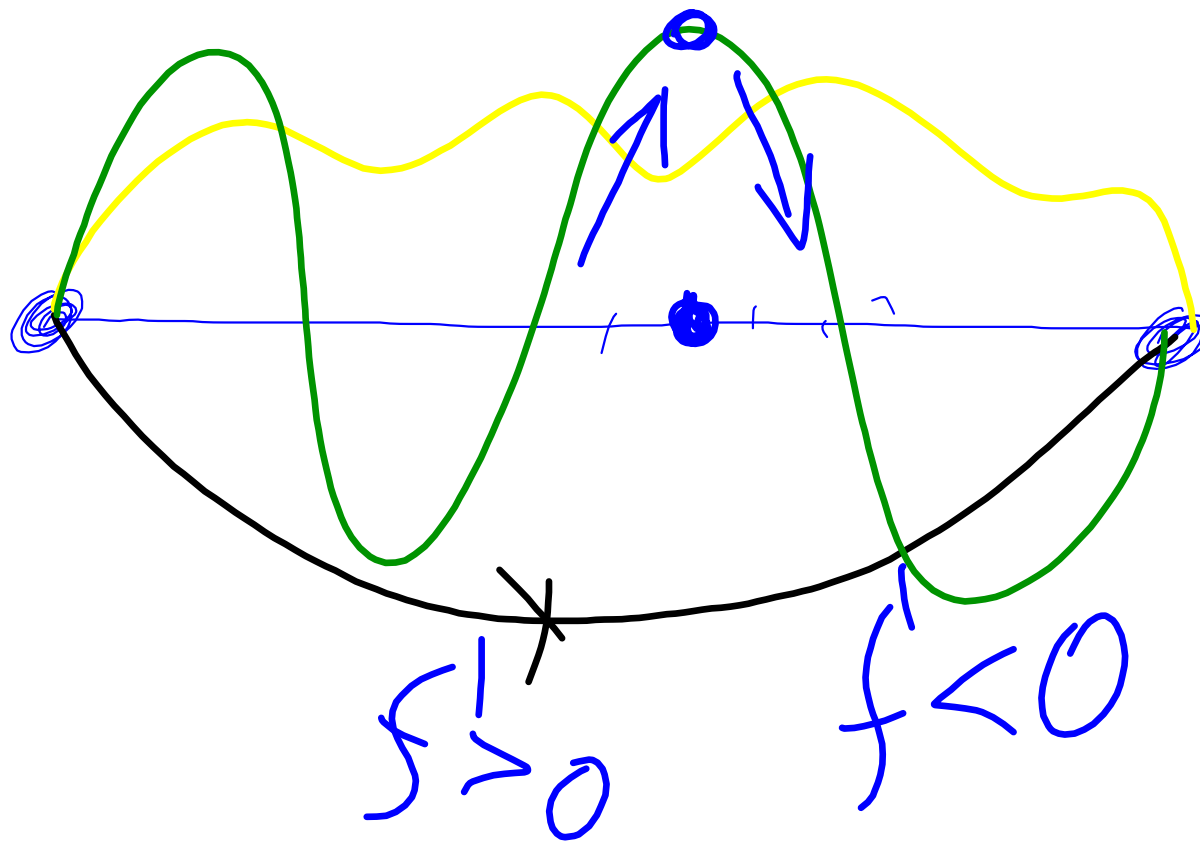


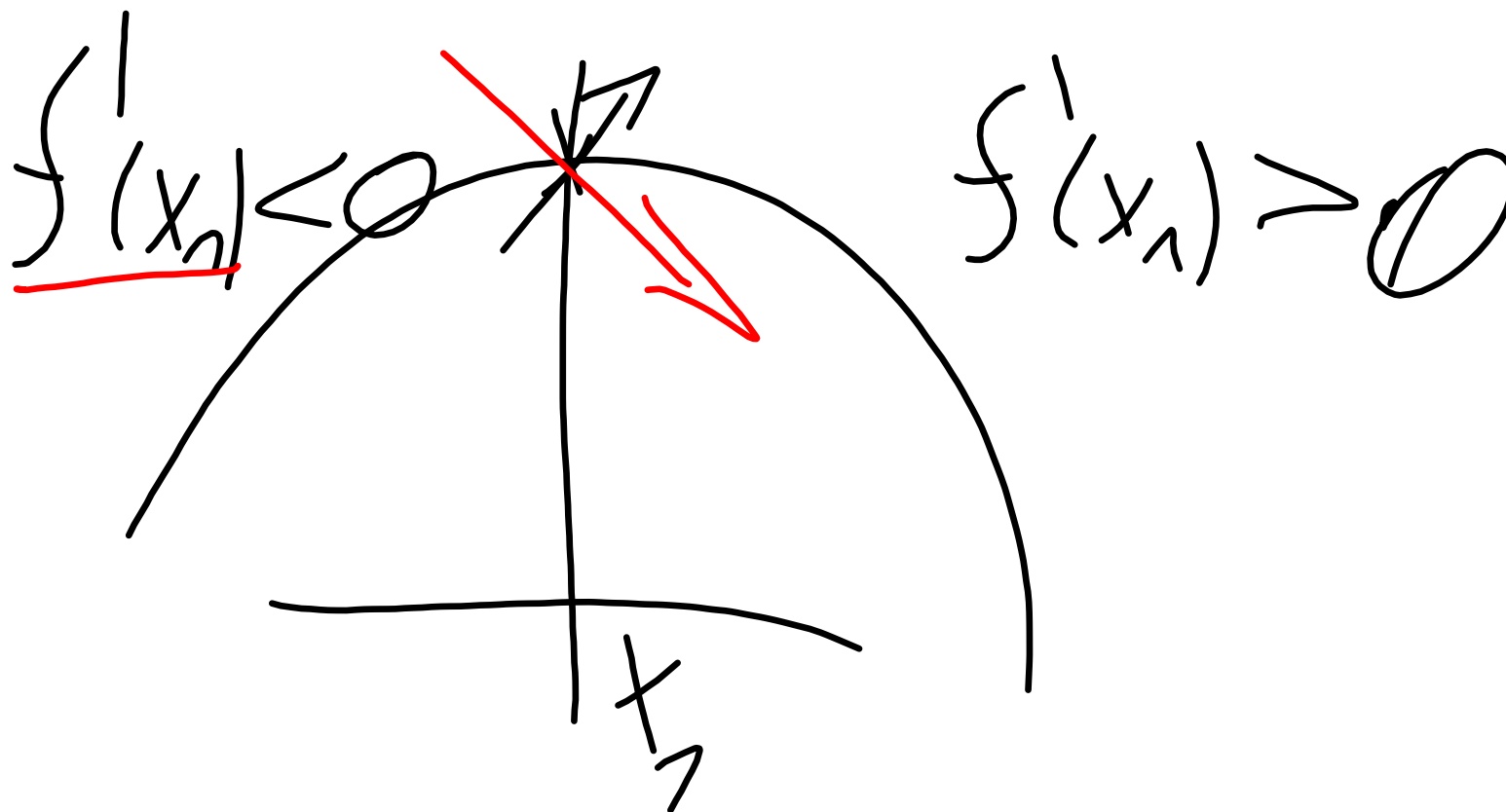
$[f(x), g(x)]$

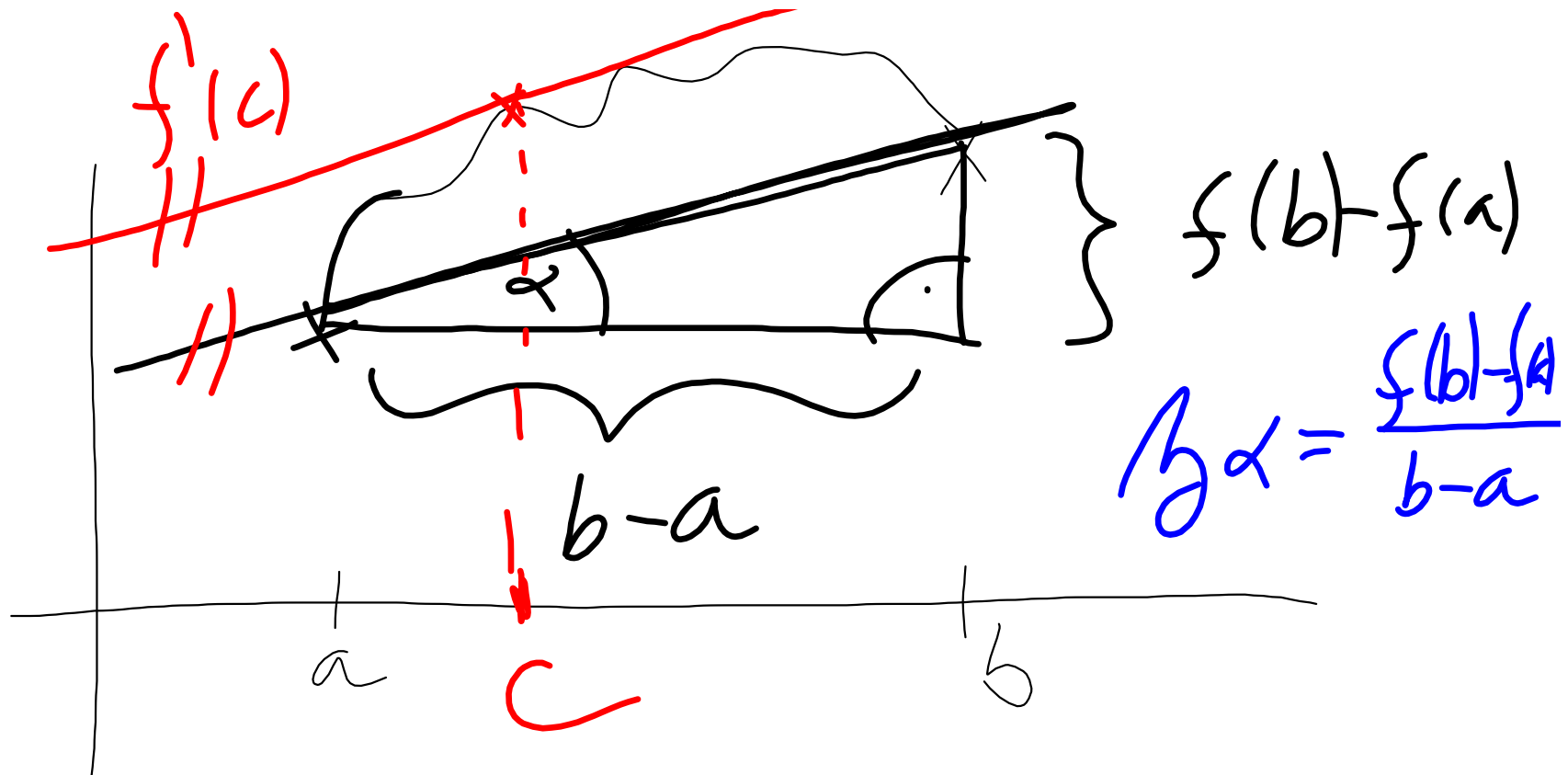


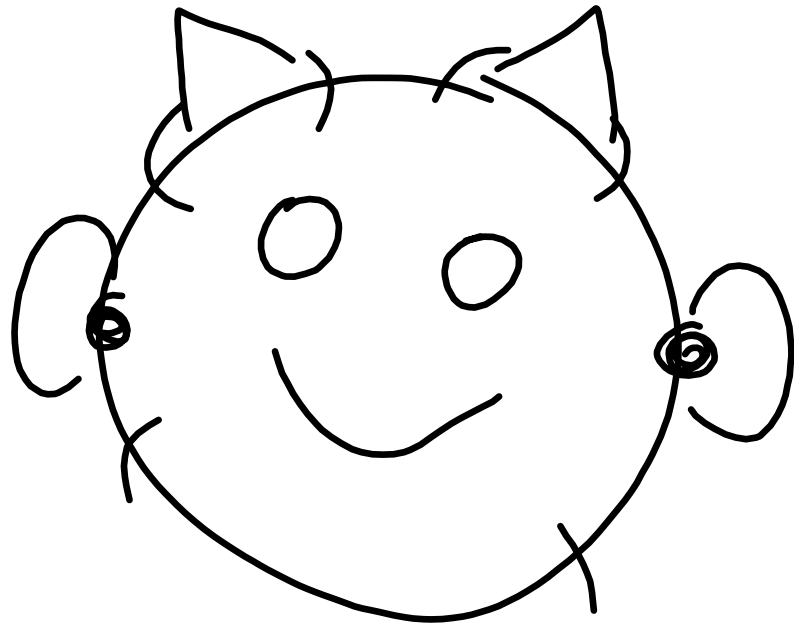










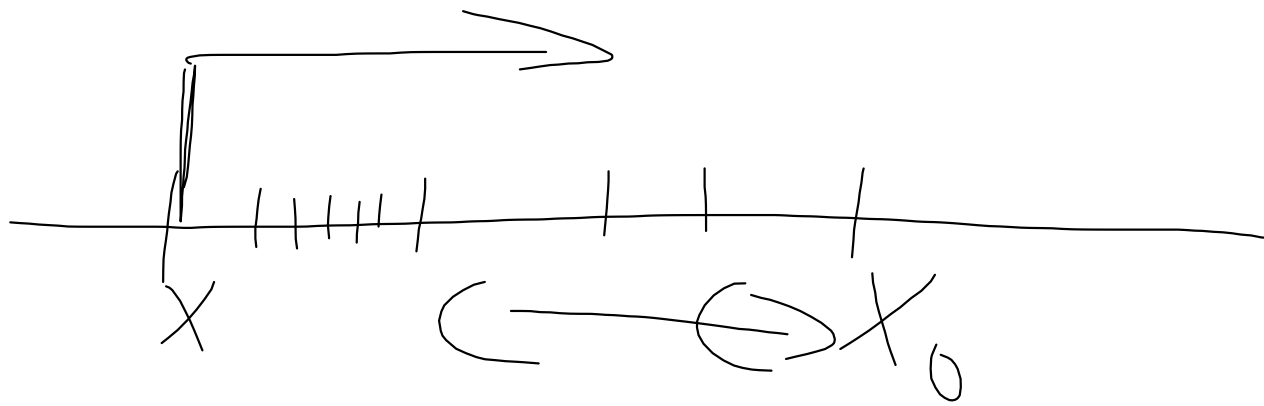


$$g(c)$$

$$g(x) = x$$

$$g'(x) = 1$$

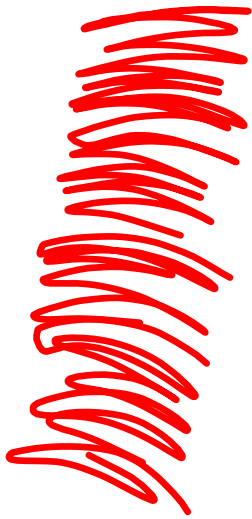
$$g'(c) = 1$$



$$\lim_{x \rightarrow \infty} \frac{17}{8} = 0$$

$$\left(\frac{1}{g(x)}\right)' = \left(g^{-1}(x)\right)' = (-1) \cdot \frac{g^{-2}(x) \cdot g'(x)}{g'(x)}$$

$$\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$$



$$\frac{-1}{x} \leq \frac{\sin x}{x} \leq \frac{1}{x}$$

$\downarrow \quad \quad \quad \downarrow$


$0 \quad \quad \quad 0$

$$\lim \frac{f}{g} = \lim \frac{\frac{1}{g}}{\frac{1}{f}}$$

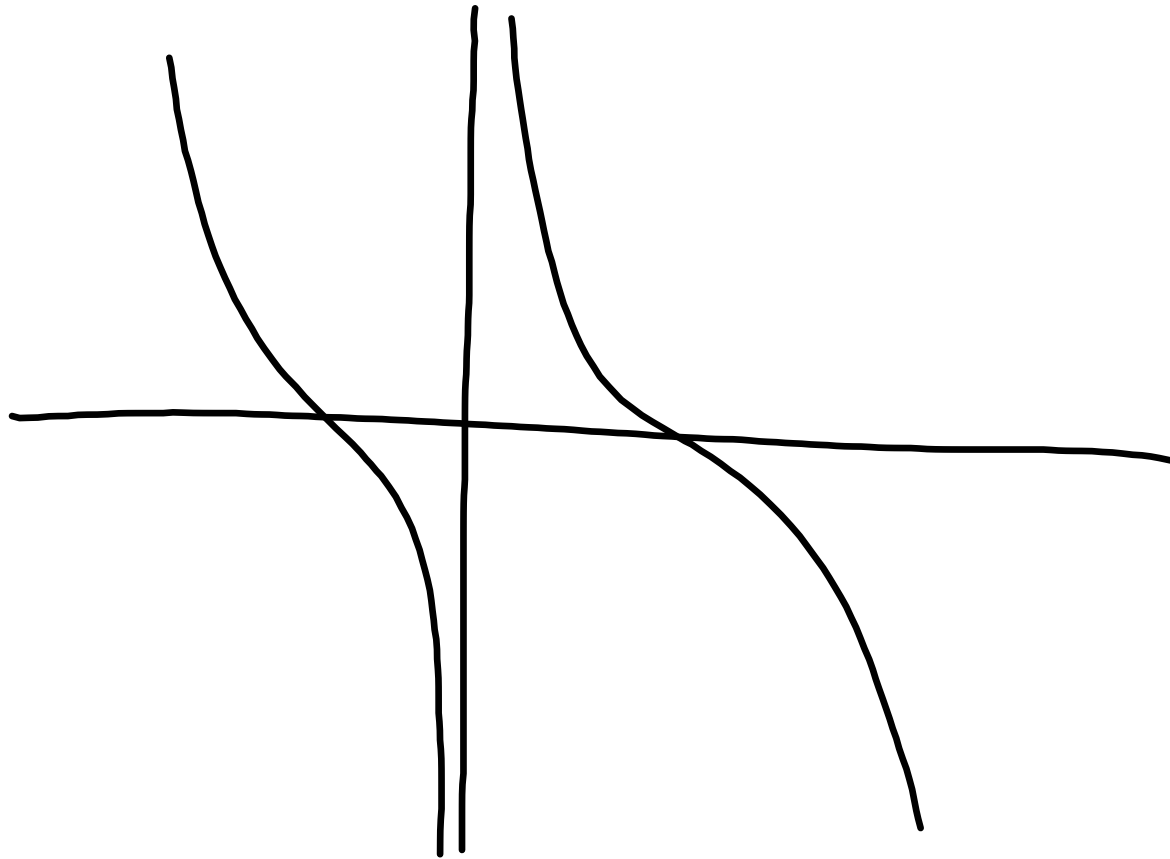
f^g

$f \rightarrow 1$

$g \rightarrow \infty$

$$f \cdot g = \frac{f}{\frac{1}{g}} = \frac{g}{\frac{1}{f}}$$


$$f^g = e^{\ln f^g} = e^{g \cdot \ln f}$$



$$\frac{1}{x} - \cos x = \frac{1 - x \cdot \cos x}{x}$$

$x \cdot \cos x \begin{cases} \xrightarrow{x \rightarrow 0^+} 0 \cdot (+\infty) \\ \xrightarrow{x \rightarrow 0^-} 0 \cdot (-\infty) \end{cases}$

$$a^3 - b^3 = (a - b) \cdot (a^2 + ab + b^2)$$

$$\sqrt[4]{m} - \sqrt[3]{m}$$

$$a^{12} - b^{12} = (a - b) \cdot (\dots)$$

$$X^{\min} = e^{h_1} X^{\min}$$

$$\frac{\sin x}{x} \cdot \sin x$$

Handwritten diagram showing the limit of $\frac{\sin x}{x}$ as $x \rightarrow 0$. The expression $\frac{\sin x}{x}$ is written above a horizontal line, with an 'x' below it. A large arrow points from the fraction down to the right, and another arrow points from the 'x' down to the right. To the right of this, the expression $\sin x$ is written, with an arrow pointing down to a circle containing the number 0.

$$\begin{aligned}
 \lim_{x \rightarrow 0} \frac{x}{\sin x} &= \lim_{x \rightarrow 0} \frac{1}{\frac{\sin x}{x}} = \\
 &= \frac{\lim_{x \rightarrow 0} 1}{\lim_{x \rightarrow 0} \frac{\sin x}{x}} = \frac{1}{1} = 1
 \end{aligned}$$