$$(x^x)' = \left(e^{\ln x^x}\right)' =$$

$$= \left(e^{x \cdot \ln x}\right)' = \underbrace{e^{x \cdot \ln x}}_{= x^x} \cdot \left(x \cdot \ln x\right)' = \ldots$$

$D(f) = [0, \infty)$ $D(f') = (0, \infty)$

$f(x) = \sqrt{x} = x^{\frac{1}{2}}$

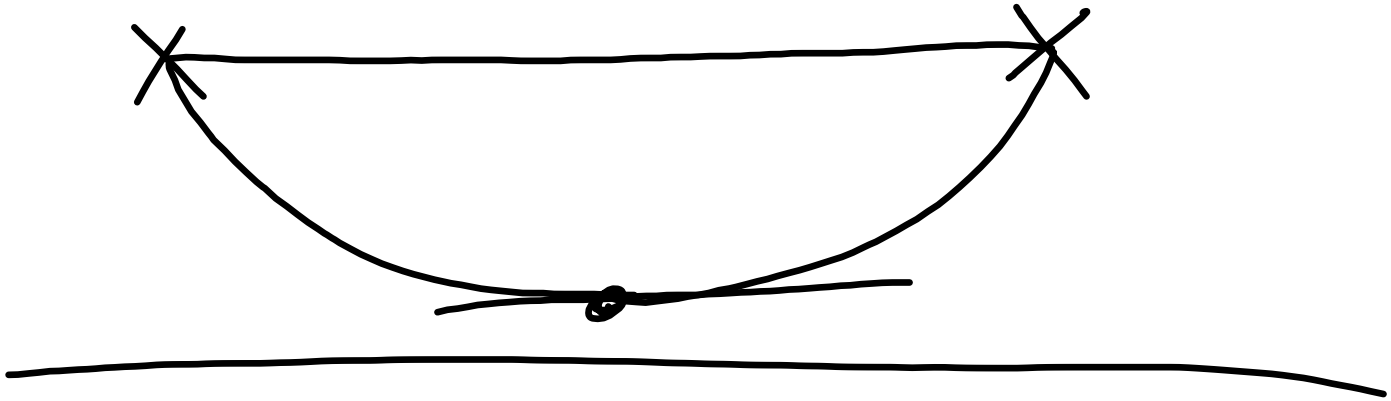
$f'(x) = \frac{1}{2} \cdot x^{-\frac{1}{2}} =$

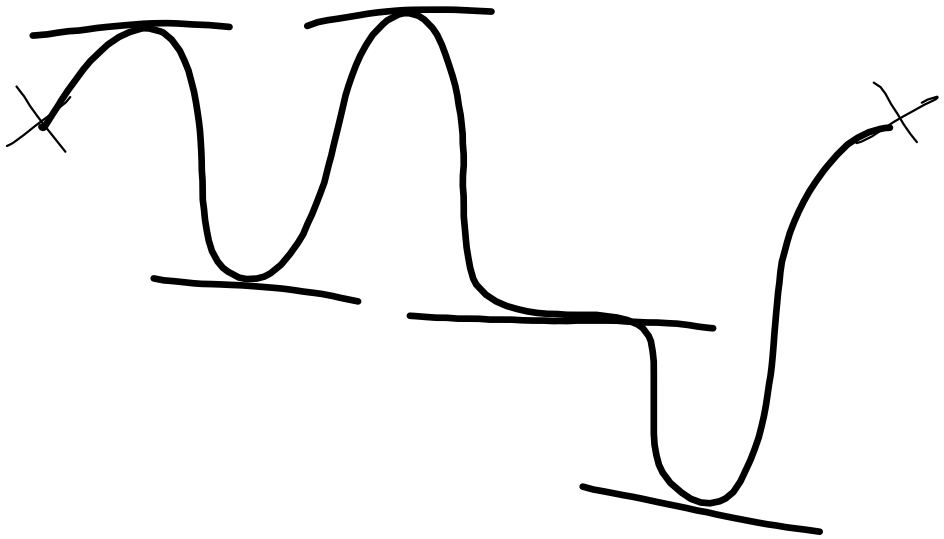
$= \frac{1}{2 \cdot \sqrt{x}}$

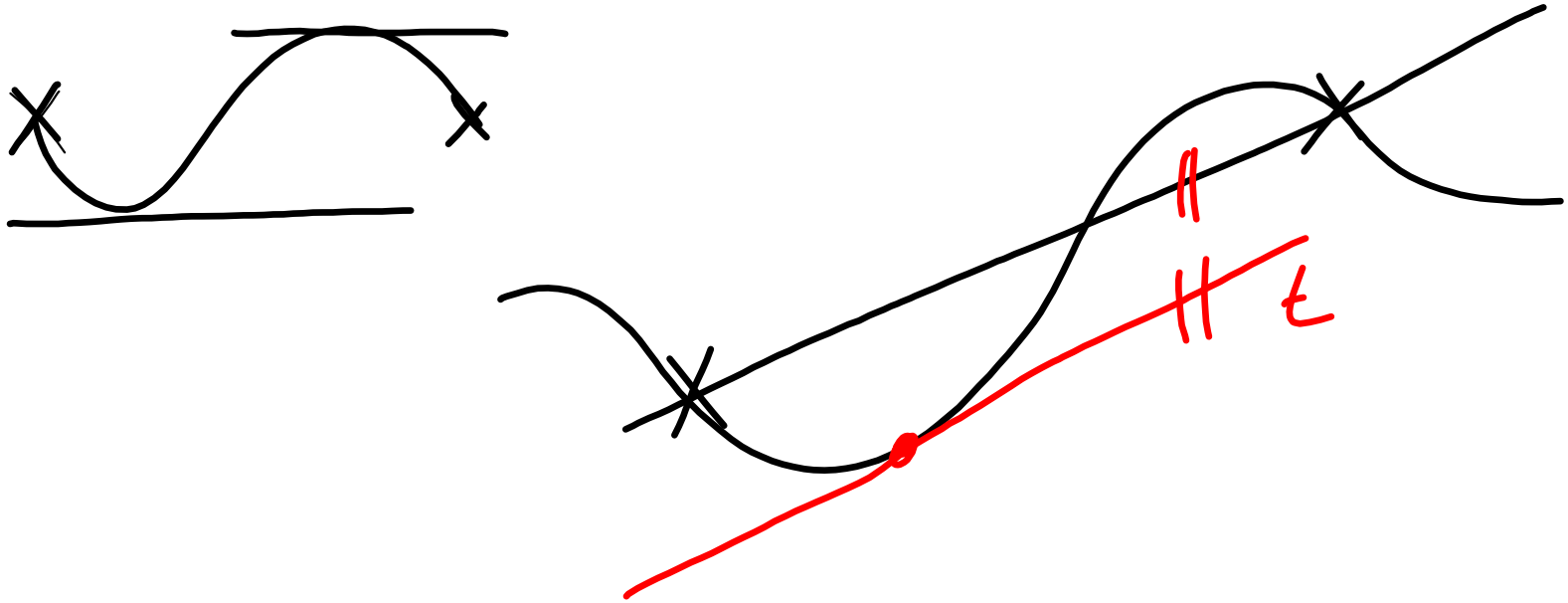
f'''''''''''

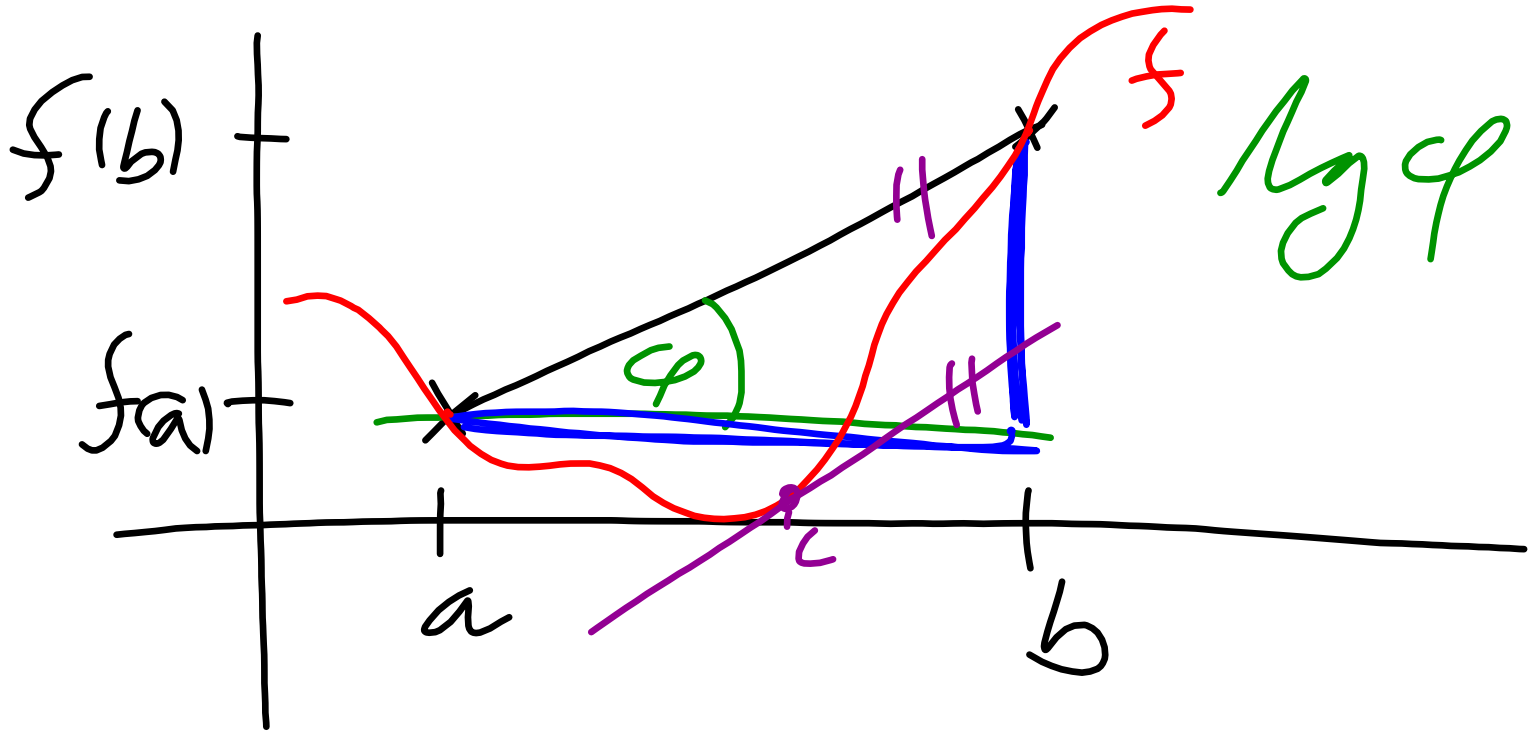
$f^{(4)}$

$$\frac{d^2f}{dx^2}$$

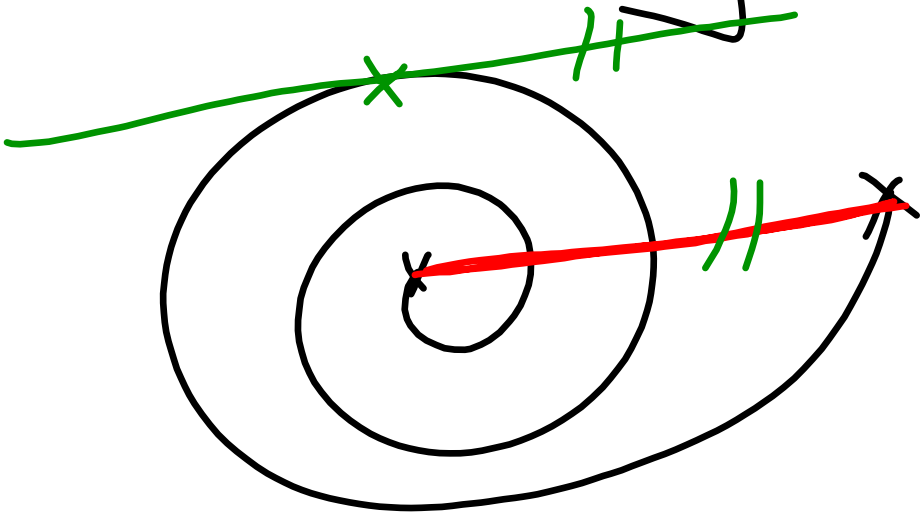





H
H
t


f(b)
f(a)
φ
f
tg φ
a
c
b

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

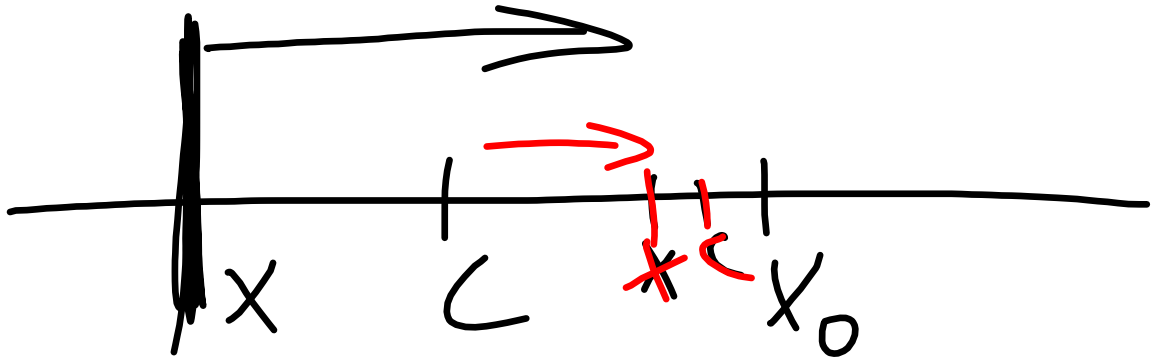


$X = 1, \ldots, 5$

$X \in [1, 5)$

$g(x) = x$ $\quad g'(x) = 1$

$f(c(x))$


x
c
x + c
x0

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

$$f \cdot g = |0 \cdot \infty| = \frac{f}{\frac{1}{g}} \quad \frac{0}{\frac{1}{\infty}}$$

$f \to 0$, $g \to \infty$

$$= \frac{g}{\frac{1}{f}} \quad \frac{\infty}{\frac{1}{0}}$$

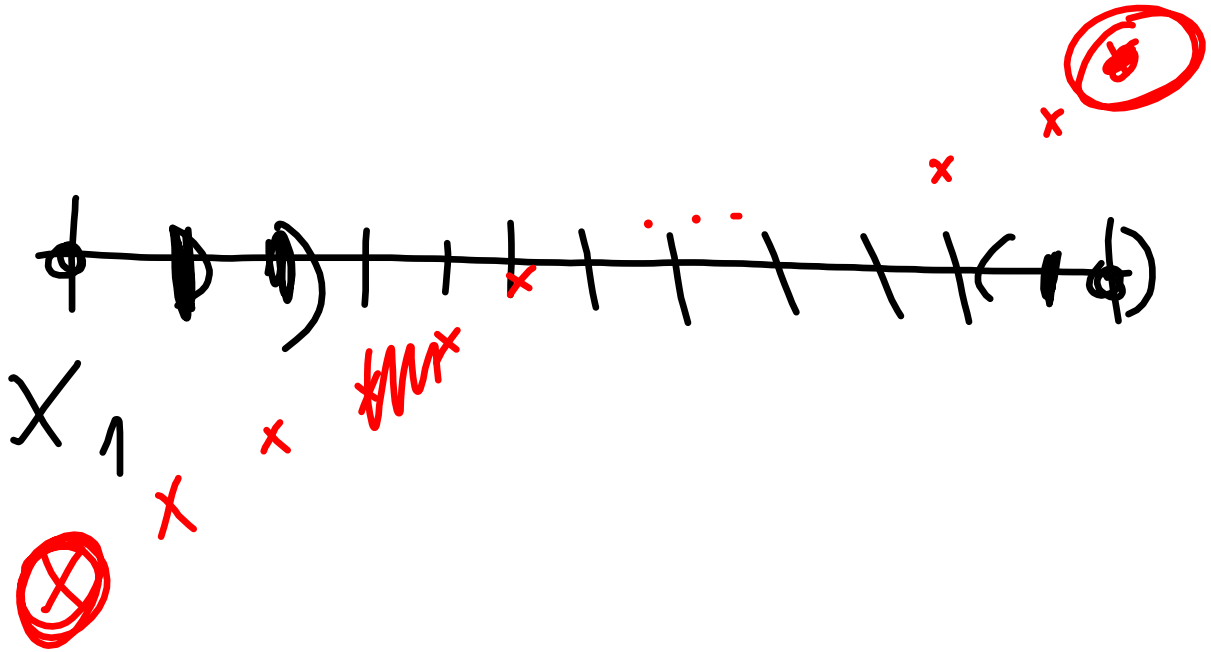
$$\lim f^g = \lim e^{\ln f^g} = e^{\lim g \cdot \ln f}$$

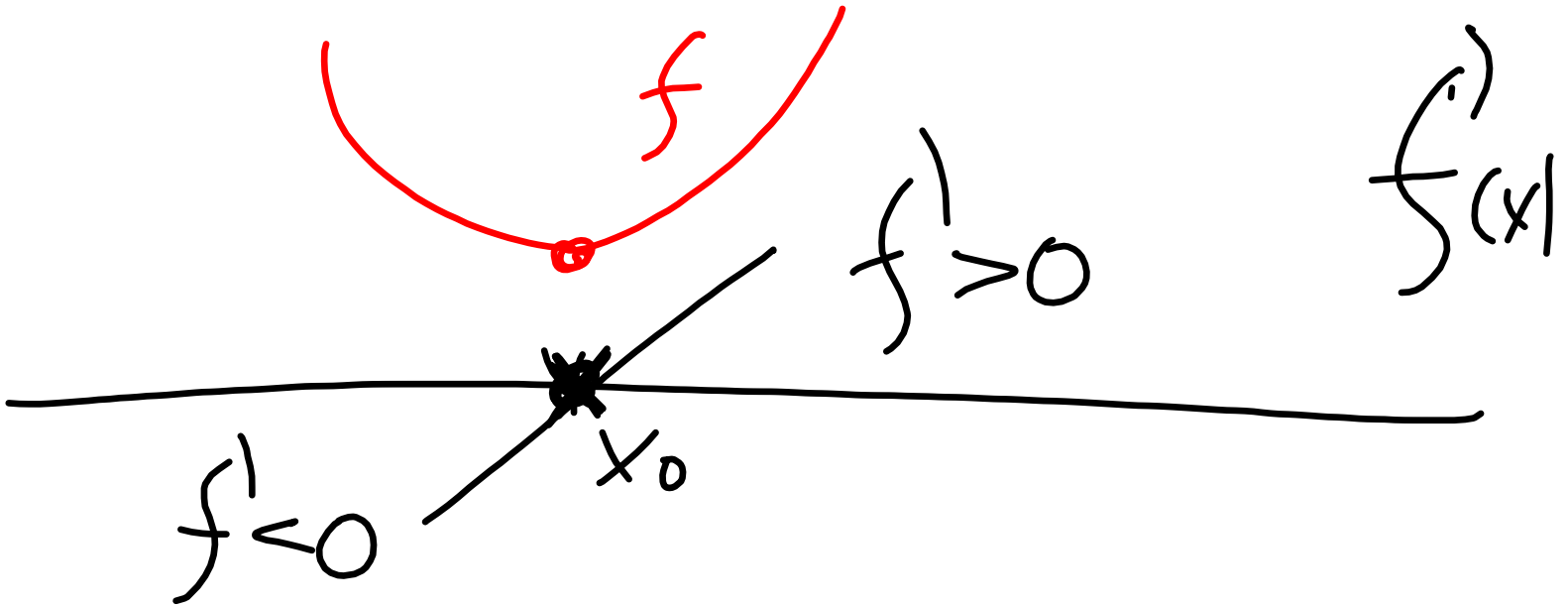
$$f - g = \frac{1}{\frac{1}{f}} - \frac{1}{\frac{1}{g}} = \frac{\frac{1}{g} - \frac{1}{f}}{\frac{1}{f \cdot g}}$$

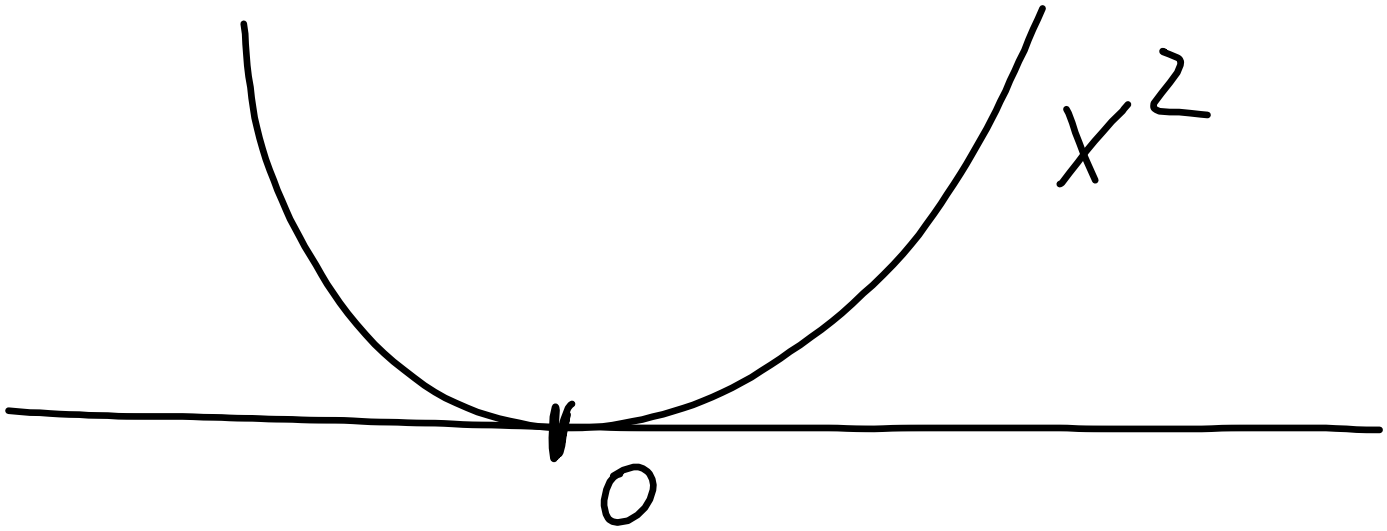
$\infty - \infty$

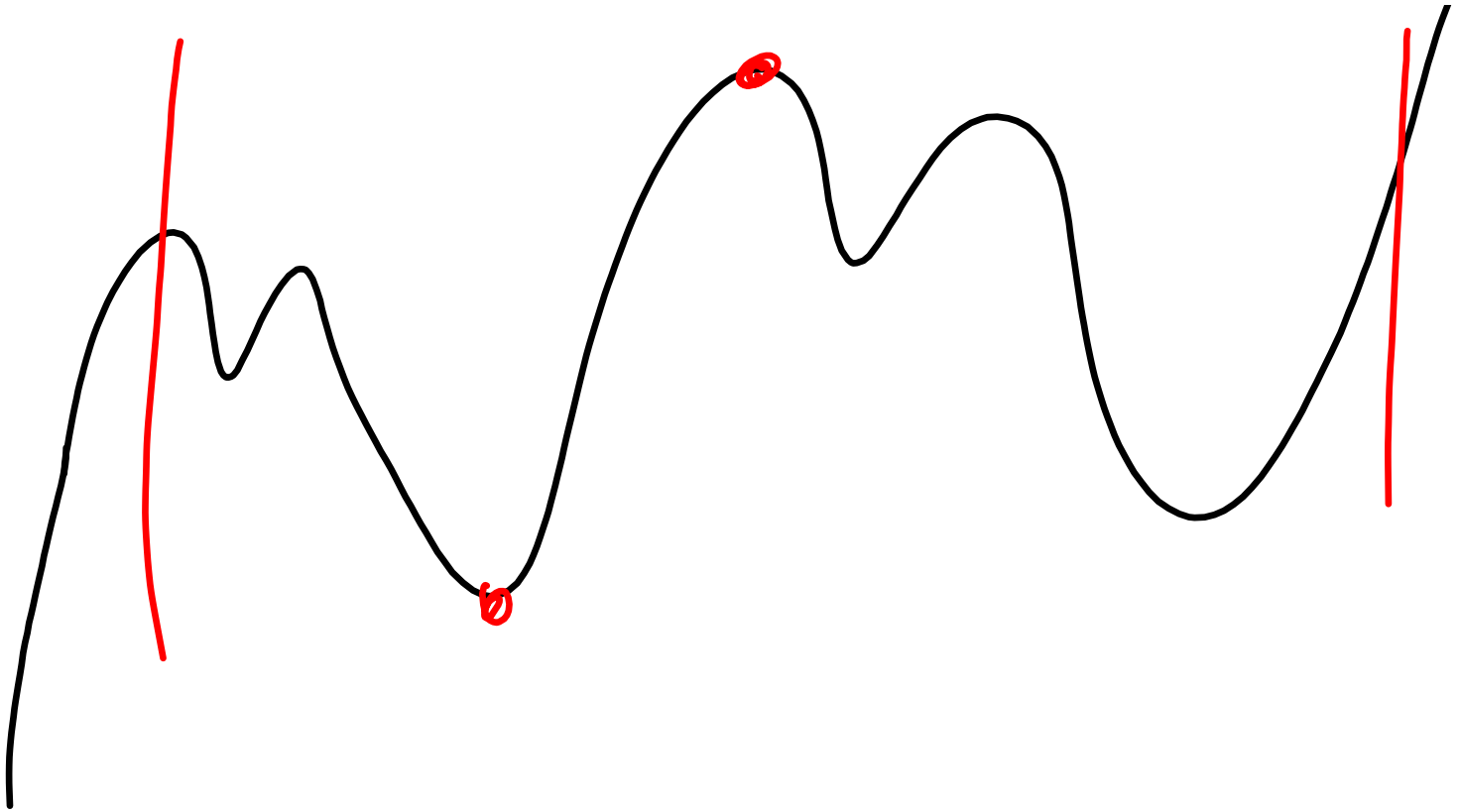
$0 \leftarrow \frac{1}{g} - \frac{1}{f} \rightarrow 0$

$\frac{1}{f \cdot g} \rightarrow 0$




f
f'>0
f'(x)
f'<0
x0


x^2
0


a
b