

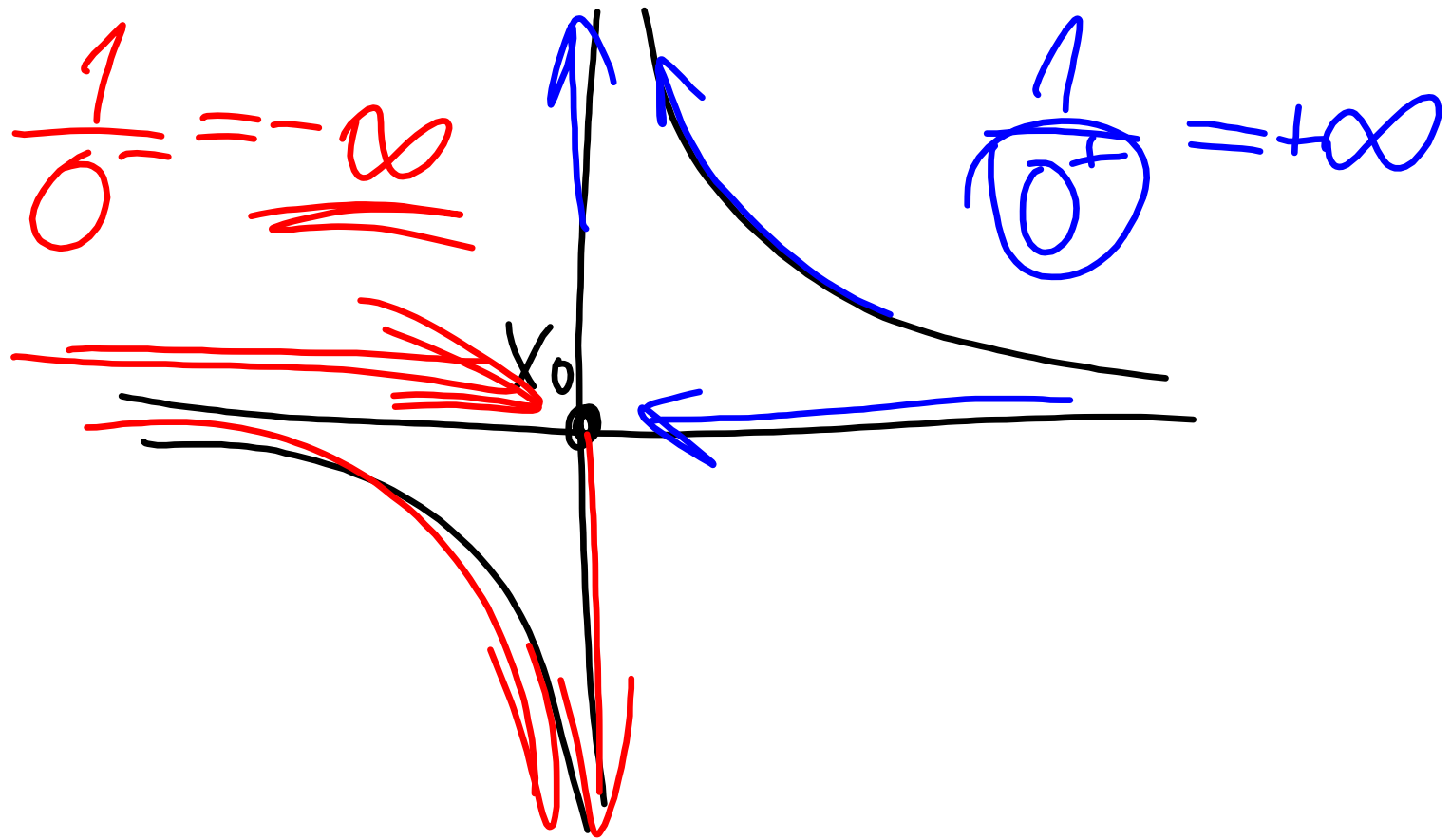
$$\lim_{x \rightarrow 0}$$

$$\sin x \cdot f(x)$$

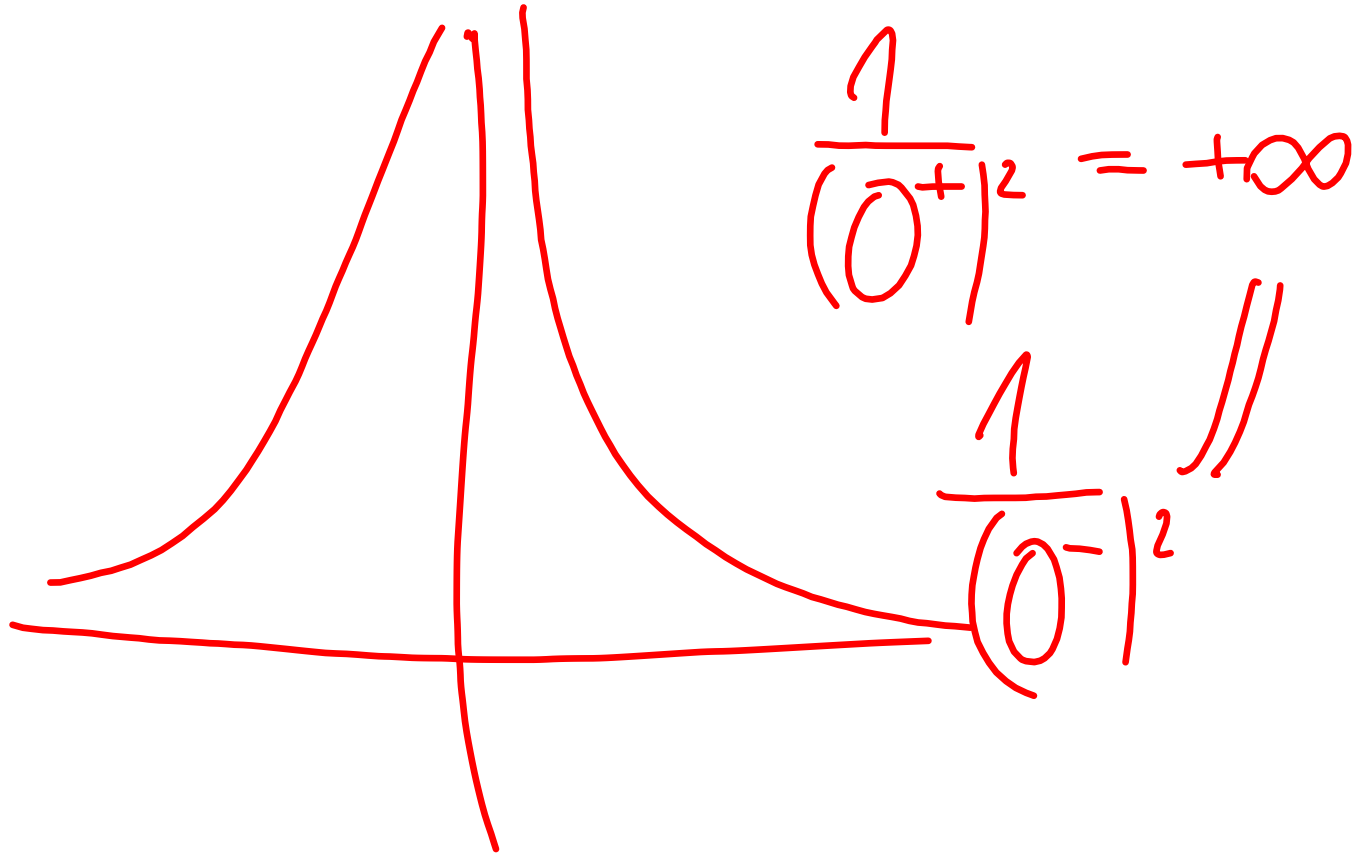
$$\downarrow$$
$$0$$

$$\leftarrow \sin x \cdot M$$
$$\rightarrow 0$$

$$\leftarrow \sin x \cdot (-M)$$
$$\rightarrow 0$$

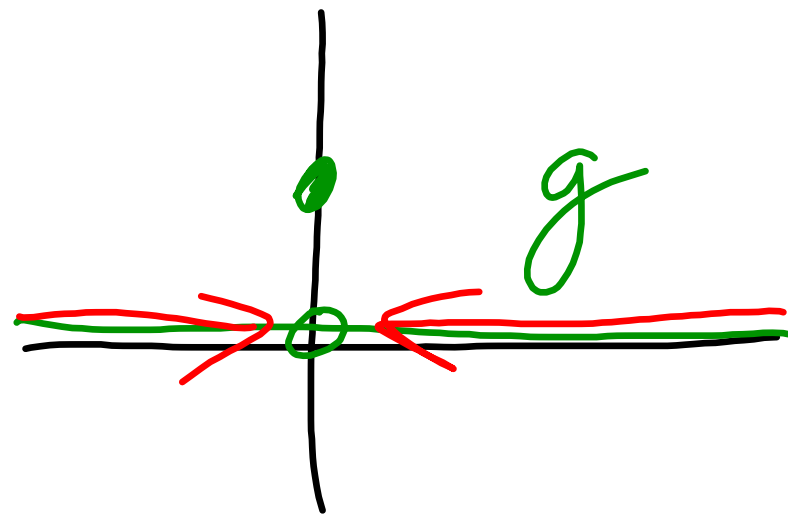
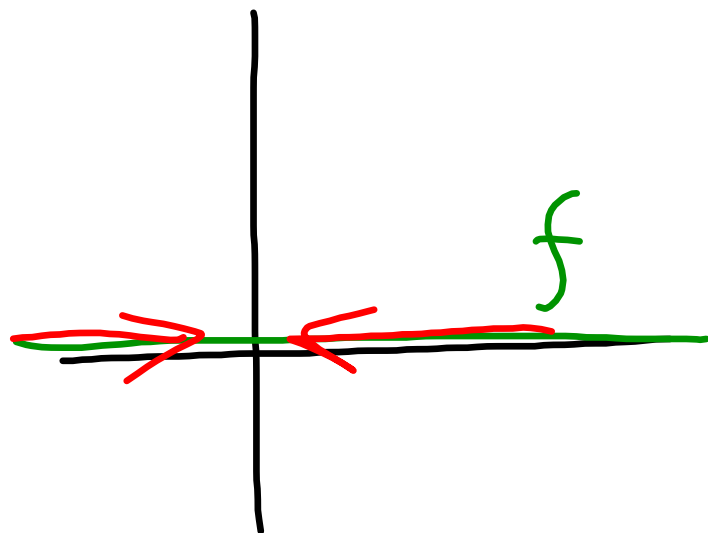


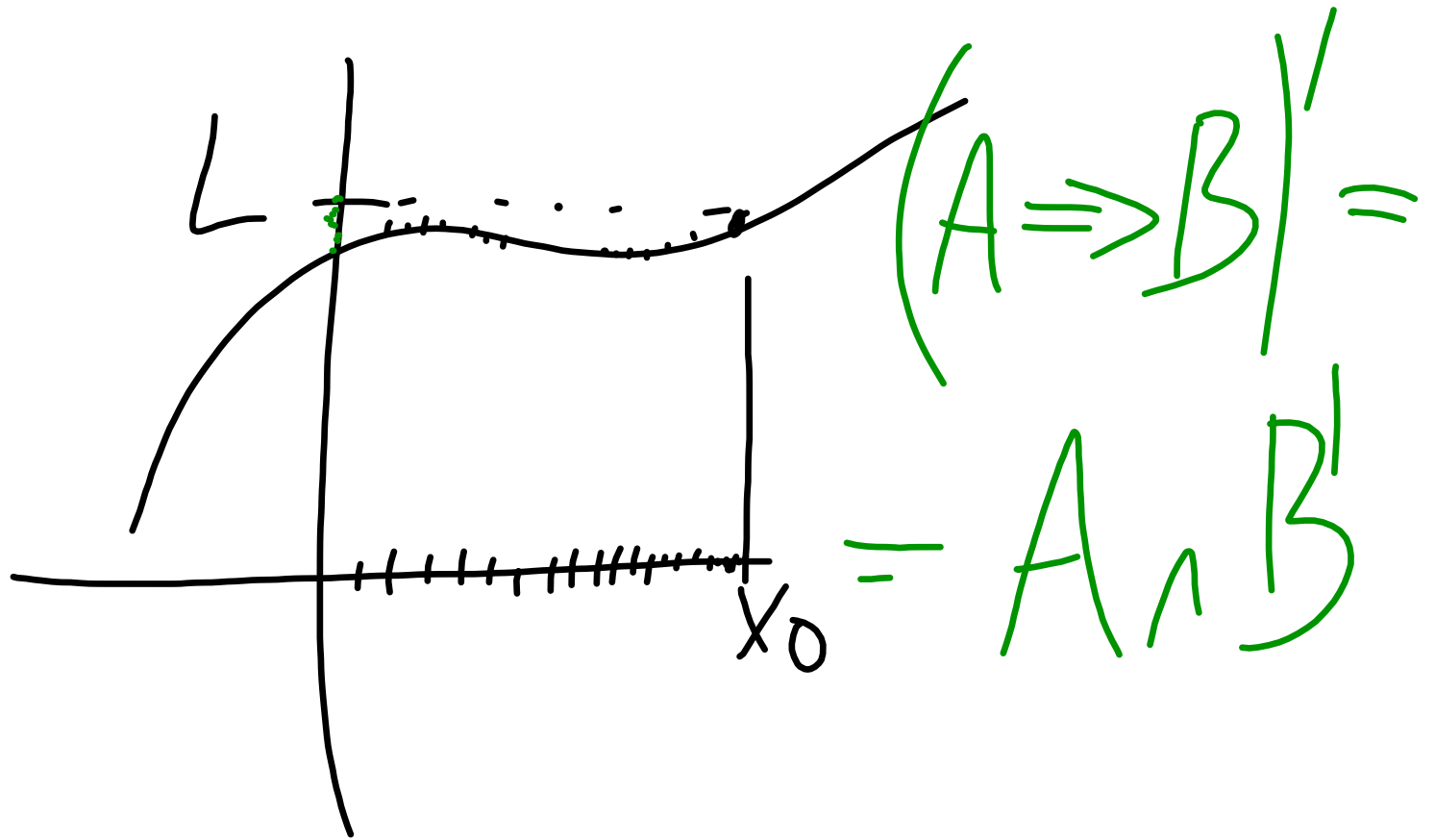
$$\frac{1}{x^2}$$

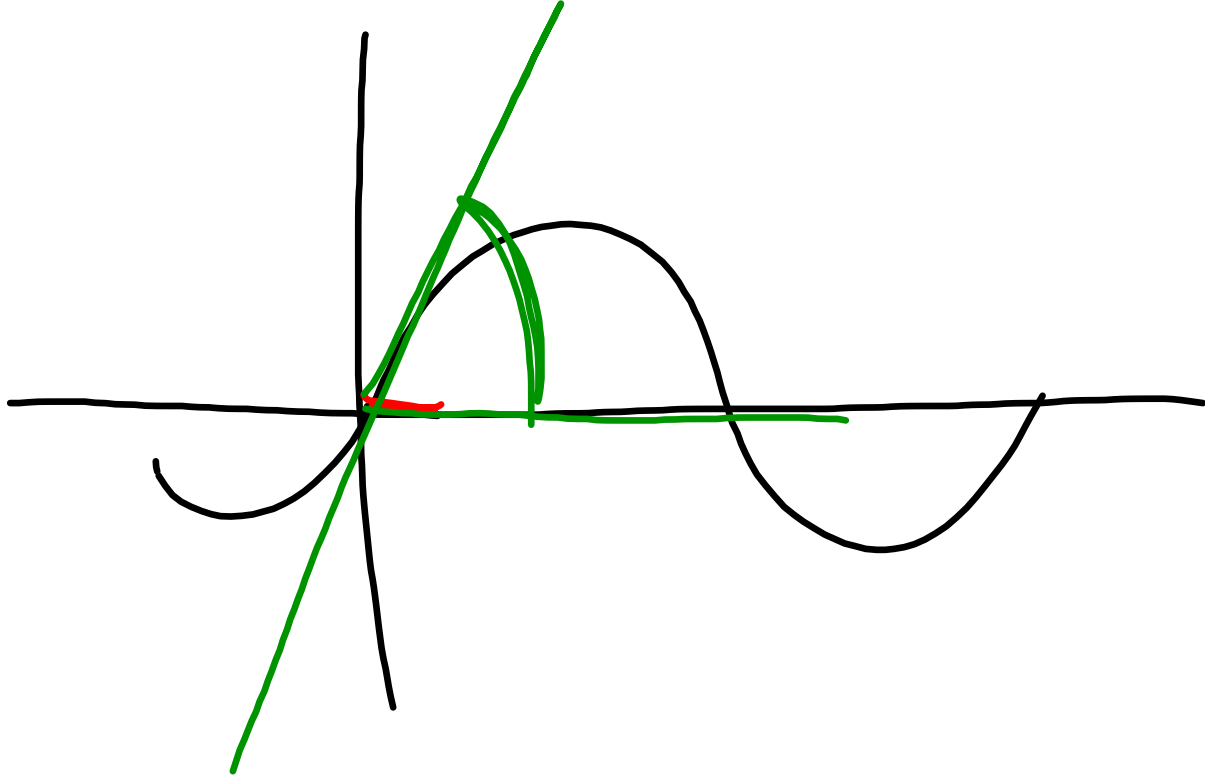


$$\frac{1}{(0^+)^2} = +\infty$$

$$\frac{1}{(0^-)^2}$$

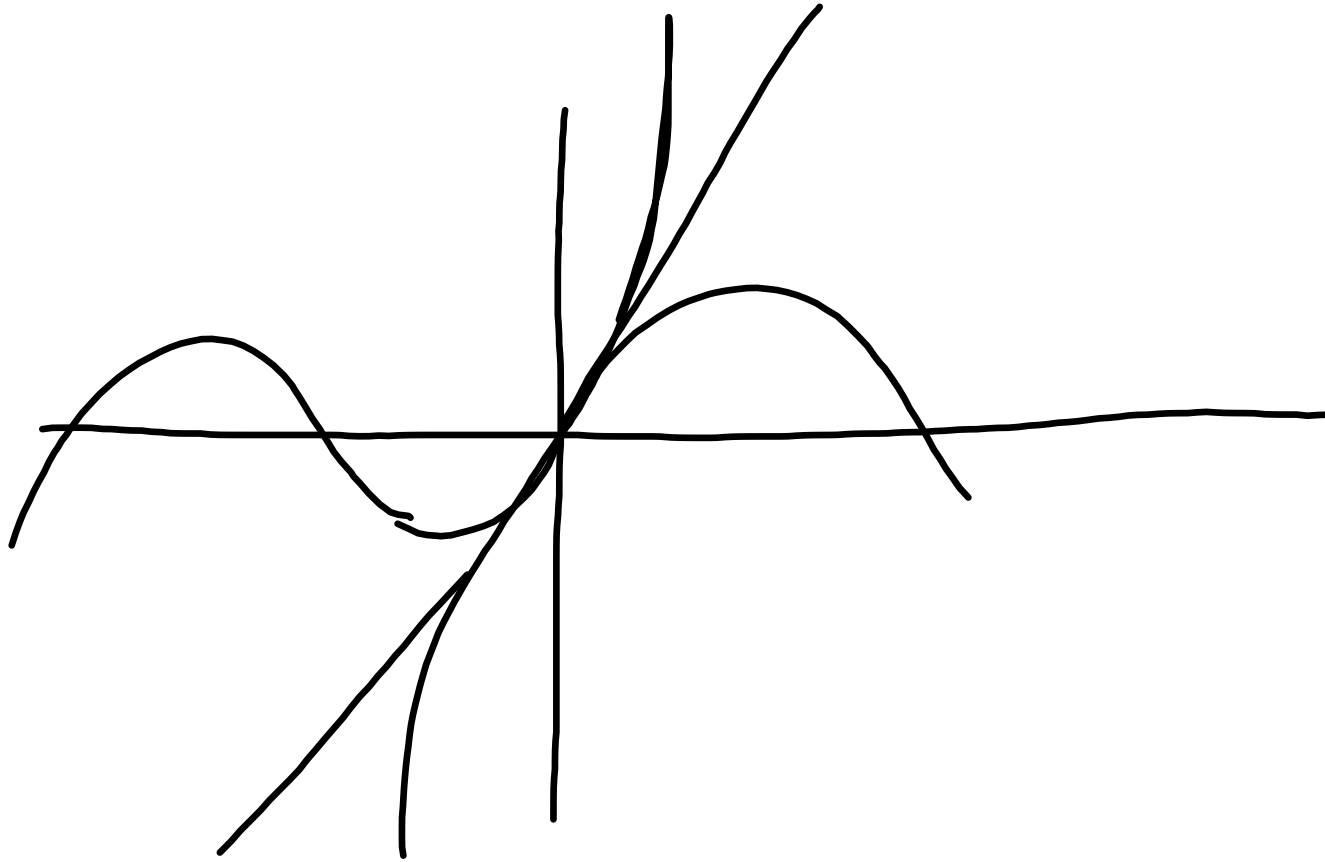






$$\lim \left(1 - 2 \sin^2 \frac{x}{2} \right) =$$

$$= \lim 1 - (\lim 2) \cdot (\lim \sin \frac{x}{2}) \cdot (\lim \sin \frac{x}{2})$$



$$\frac{1}{5} < 7 \quad | \quad \frac{5}{1} > \frac{1}{7}$$

$$1 < 7.5$$
$$\frac{1}{7} < 5$$

$$\lim_{x \rightarrow 0} \frac{\sin x}{x} = \left| \frac{0}{0} \right| = \lim_{x \rightarrow 0} \frac{\cos x}{1}$$

$$\frac{d}{dx}(\sin x) = \cos x = \frac{1}{1} = 1$$

$$\begin{aligned}
 & \lim_{x \rightarrow 0} \frac{\sin 5x}{4x} = \left| \frac{0}{0} \right| = \frac{5}{4} \\
 & = \lim_{x \rightarrow 0} \frac{\sin 5x \cdot 5}{5x \cdot 4} = \left. \begin{array}{l} y = 5x \\ x \rightarrow 0 \\ 5x \rightarrow 0 \\ y \rightarrow 0 \end{array} \right| = \frac{5}{4} \cdot \lim_{y \rightarrow 0} \frac{\sin y}{y}
 \end{aligned}$$

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