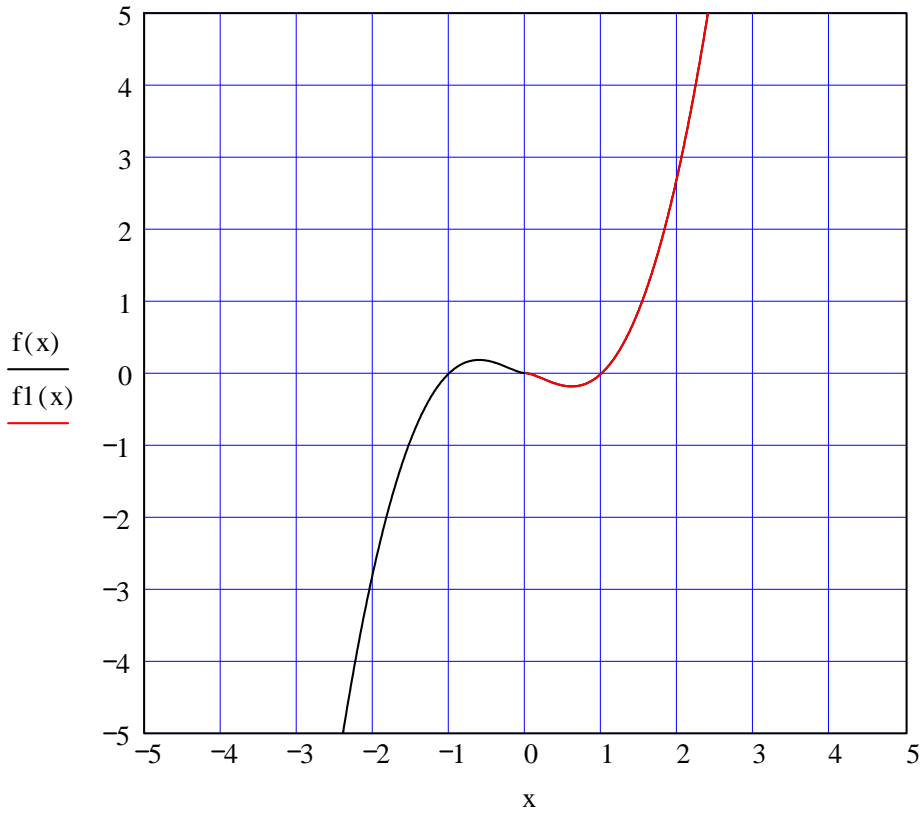


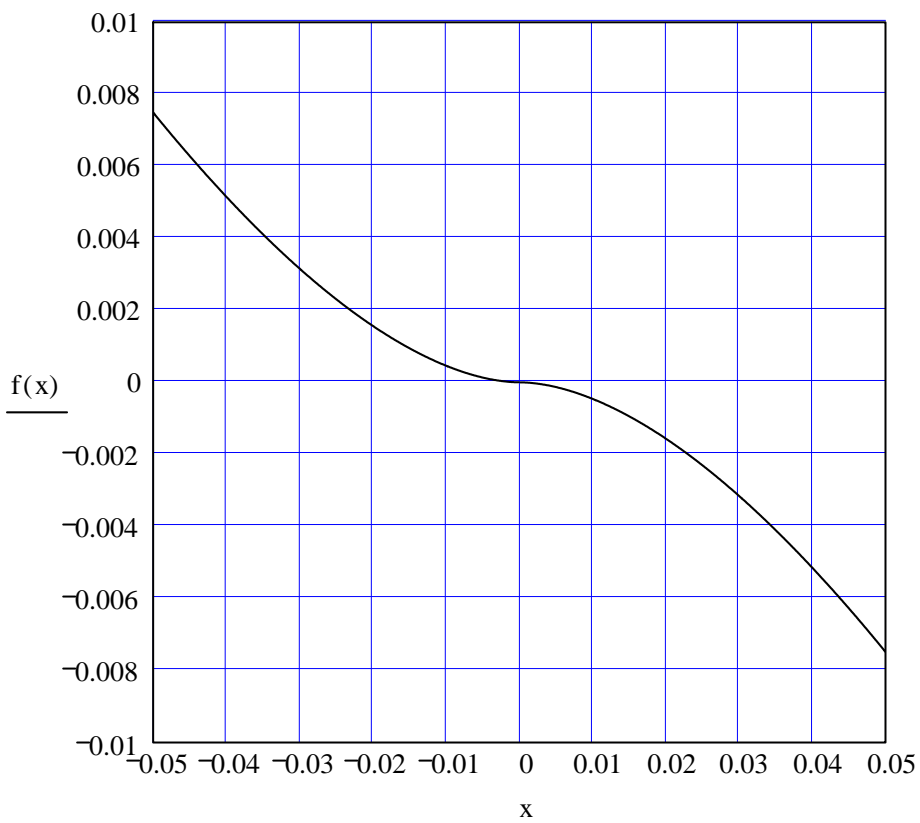
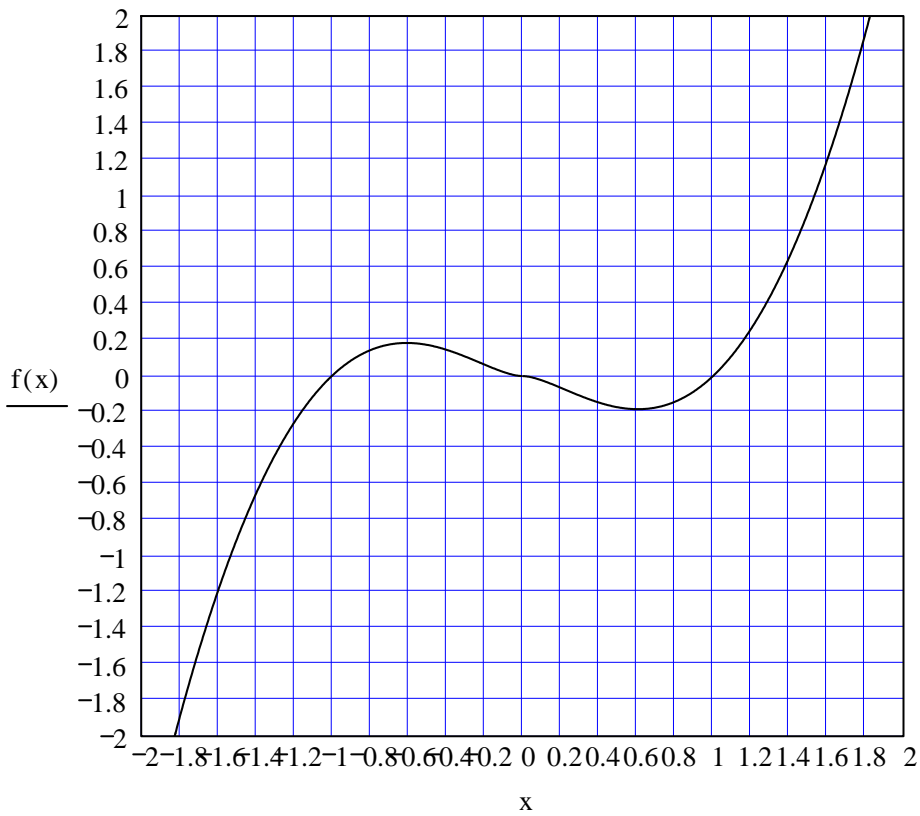
# Graphics

## Extremum

$$f(x) := x \cdot |x| \cdot \ln(|x|)$$

$$f1(x) := x^2 \cdot \ln(x)$$

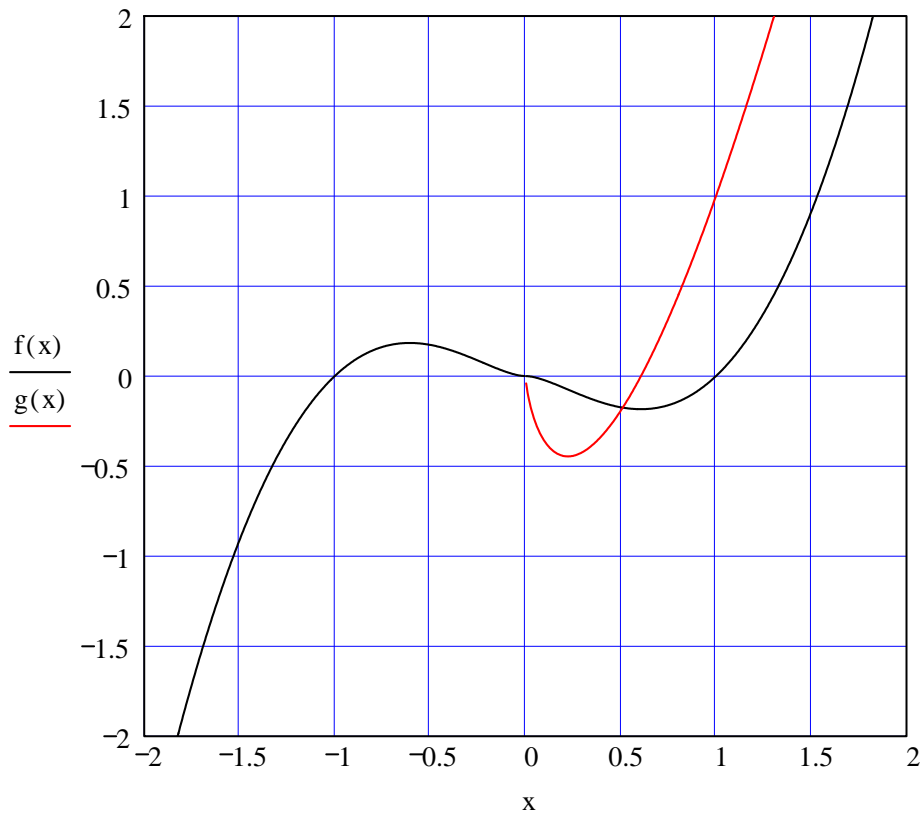




### First derivative

$x^2 \cdot \ln(x)$  by differentiation, yields  $2 \cdot x \cdot \ln(x) + x$

$g(x) := 2 \cdot x \cdot \ln(x) + x$

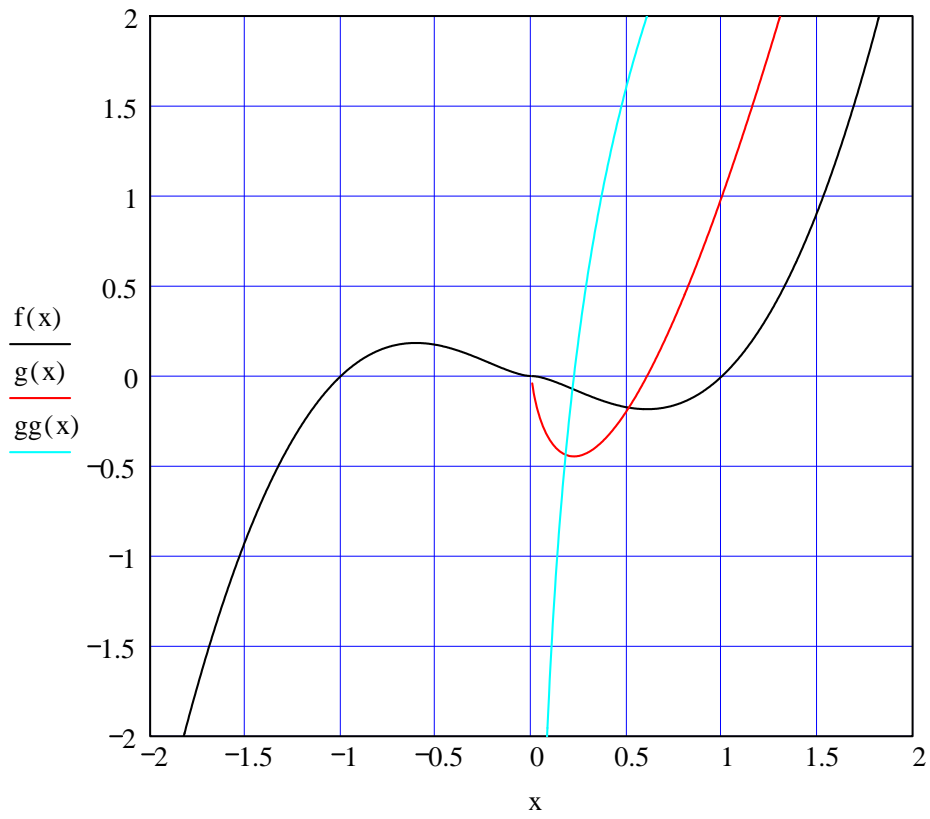


Given  $g(x) = 0$  Find  $x \rightarrow \exp\left(\frac{-1}{2}\right)$

### Second derivative

$2 \cdot x \cdot \ln(x) + x$  by differentiation, yields  $2 \cdot \ln(x) + 3$

$gg(x) := 2 \cdot \ln(x) + 3$



Given  $gg(x) = 0$  Find  $x \rightarrow \exp\left(\frac{-3}{2}\right)$