**Problem statement** Suppose $f(x) = x^{\left(\frac{1}{10}\right)}$, $g(x) = e^{\left(\frac{1}{100}\right)}$, and $h(x) = \ln x$.

a) Find an interval of positive numbers where the graph of $f$ is above the graph of both $g$ and $h$.

b) Find an interval of positive numbers where the graph of $g$ is above the graph of both $f$ and $h$.

c) Find an interval of positive numbers where the graph of $h$ is above the graph of both $f$ and $g$.

d) Suppose we consider a very short interval of positive numbers very close to 0, such as $[10^{-10}, 2 \cdot 10^{-10}]$. Which graph will be on top? Which graph will be on the bottom?

e) Suppose we consider an interval of positive numbers which are very large, such as $[10^{100}, 2 \cdot 10^{100}]$. Which graph will be on top? Which graph will be on the bottom?