Exercises

16.22 [1DW]Difficulty:*.Let $f_0, f_1 : \mathbb{R} \to \mathbb{R}$, $f_0, f_1 \in C^\infty$ with $f_0', f_1' > 0$ and $f_1(1) > f_0(0)$: then one can interpolate with a function $f \in C^\infty$ that satisfies

$$f(x) = f_0(x) \text{ if } x \leq 0$$
$$f(x) = f_1(x) \text{ if } x \geq 1$$

so that the interpolant has $f' > 0$.

What if $f_1(1) = f_0(0)$?

Solution 1. [1DX]