Minime si maxime pentru functii celebre

Determinati domeniu pozitiv unde functia f este pozitiva. Apoi determinati minimul local in jurul valorii 0.5 maximul

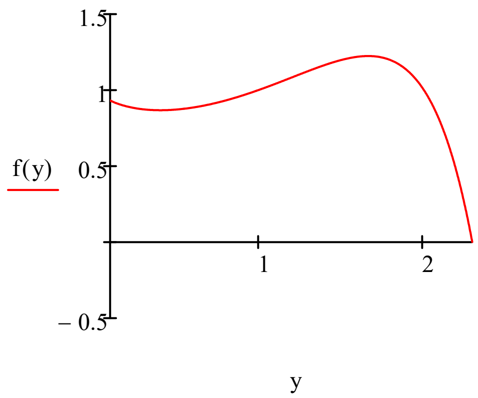
$f(x) := (x + 1)^x - x^{x+1}$ $\quad L := f(x) = 0 \text{ solve } \rightarrow 2.2931662874118610315$

$x := 0.5 \quad f(x) = 0.871$

Given $\quad f(x) > 0 \quad s := \text{Minimize}(f, x) \quad s = 0.40440835544225556 \quad f(s) = 0.867$

$x := 1.5 \quad f(x) = 1.197$

Given $\quad f(x) > 0 \quad S := \text{Maximize}(f, x) \quad S = 1.6635580556771492 \quad f(S) = 1.223$



Determinati minimele si/sau maximile functiilor de tip Foias (Ciprian Foias matematicean roman)

$F(x) := x - \left(1 + \frac{1}{x}\right)^x$ functia lui Foiaș $\quad F_1(x) := x - \left(1 + \frac{1}{x} + \frac{1}{x^2}\right)^x \quad F_2(x) := x - \left(1 + \frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^3}\right)^x$

$G(x) := x^2 - \left(1 + \frac{1}{x}\right)^x \quad G_1(x) := x^2 - \left(1 + \frac{1}{x} + \frac{1}{x^2}\right)^x \quad G_2(x) := x^2 - \left(1 + \frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^3}\right)^x$

$H(x) := x^3 - \left(1 + \frac{1}{x}\right)^x \quad H_1(x) := x^3 - \left(1 + \frac{1}{x} + \frac{1}{x^2}\right)^x \quad H_2(x) := x^3 - \left(1 + \frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^3}\right)^x$

$V(x) := \ln\left(1 + \frac{1}{x}\right) - \left(1 + \frac{1}{x}\right)^x \quad V_1(x) := \ln\left(1 + \frac{1}{x}\right) - \left(1 + \frac{1}{x} + \frac{1}{x^2}\right)^x \quad V_2(x) := \ln\left(1 + \frac{1}{x}\right) - \left(1 + \frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^3}\right)^x$

$W(x) := 1 + x - \left(1 + \frac{1}{x}\right)^{\sin(x)} \quad W_1(x) := 1 + x - \left(1 + \frac{1}{x} + \frac{1}{x^2}\right)^{\sin(x)} \quad W_2(x) := 1 + x - \left(1 + \frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^3}\right)^{\sin(x)}$

$Q(x) := 1 + \sin(x) - \left(1 + \frac{1}{x}\right)^{\sin(x)} \quad Q_1(x) := 1 + \sin(2x) - \left(1 + \frac{1}{x} + \frac{1}{x^2}\right)^{\sin(2x)}$

$Q_2(x) := 1 + \sin(3x) - \left(1 + \frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^3}\right)^{\sin(3x)}$