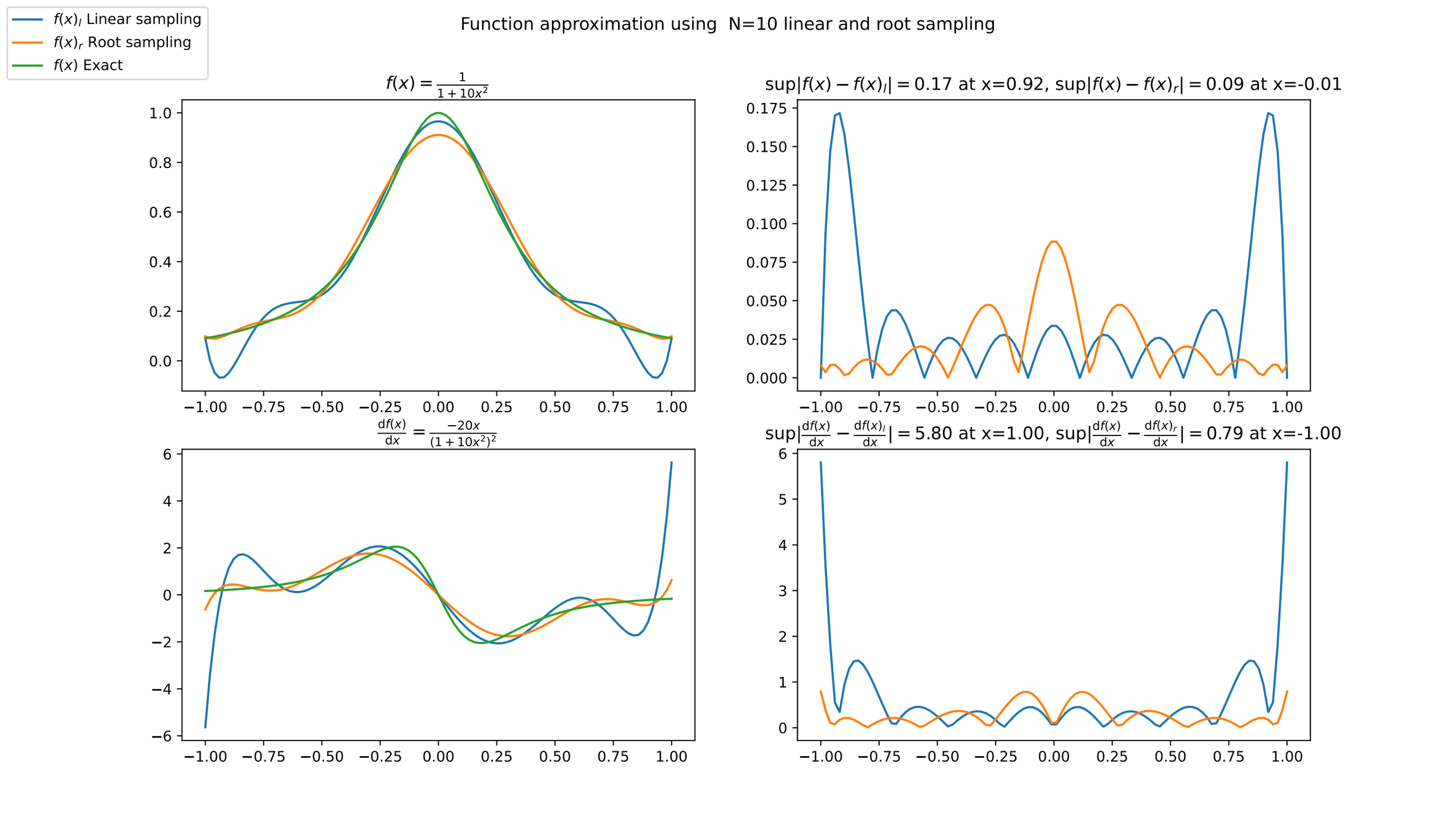
$f(x)_l$ Linear sampling
$f(x)_r$ Root sampling
$f(x)$ Exact
Function approximation using N=10 linear and root sampling
$f(x) = \frac{1}{1+10x^2}$
$\sup|f(x) - f(x)_l| = 0.17$ at x=0.92, $\sup|f(x) - f(x)_r| = 0.09$ at x=-0.01
$\frac{df(x)}{dx} = \frac{-20x}{(1+10x^2)^2}$
$\sup|\frac{df(x)}{dx} - \frac{df(x)_l}{dx}| = 5.80$ at x=1.00, $\sup|\frac{df(x)}{dx} - \frac{df(x)_r}{dx}| = 0.79$ at x=-1.00