Relative Error L_2 Table: Classical Method for Viscous Burgers Equation

0.1 Viscous Burgers Equation: Forward-Time Central Difference

- The relative error L_2 with initial condition $u_0(x) = -\sin\left(\pi\frac{x}{8}\right)$

Relative Error L_2 at T / Time step Δt	$T = 10.0$	$T = 9.0$	$T = 8.0$	$T = 5.0$
3.5×10^{-3}	2.85×10^{-2}	2.94×10^{-2}	3.044×10^{-2}	3.25×10^{-2}
2.7×10^{-3}	2.85×10^{-2}	2.94×10^{-2}	3.043×10^{-2}	3.24×10^{-2}
1.95×10^{-3}	2.84×10^{-2}	2.94×10^{-2}	3.04×10^{-2}	3.25×10^{-2}

- The relative error L_2 with initial condition $u_0(x) = \exp(-(x+2)^2)$

Relative Error L_2 at T / Time step Δt	$T = 5.0$	$T = 4.0$	$T = 3.5$	$T = 2.5$
3.5×10^{-3}	1.47×10^{-2}	1.5×10^{-2}	1.54×10^{-2}	1.79×10^{-2}
2.7×10^{-3}	1.46×10^{-2}	1.52×10^{-2}	1.56×10^{-2}	1.81×10^{-2}
1.95×10^{-3}	1.47×10^{-2}	1.523×10^{-2}	1.58×10^{-2}	1.824×10^{-2}