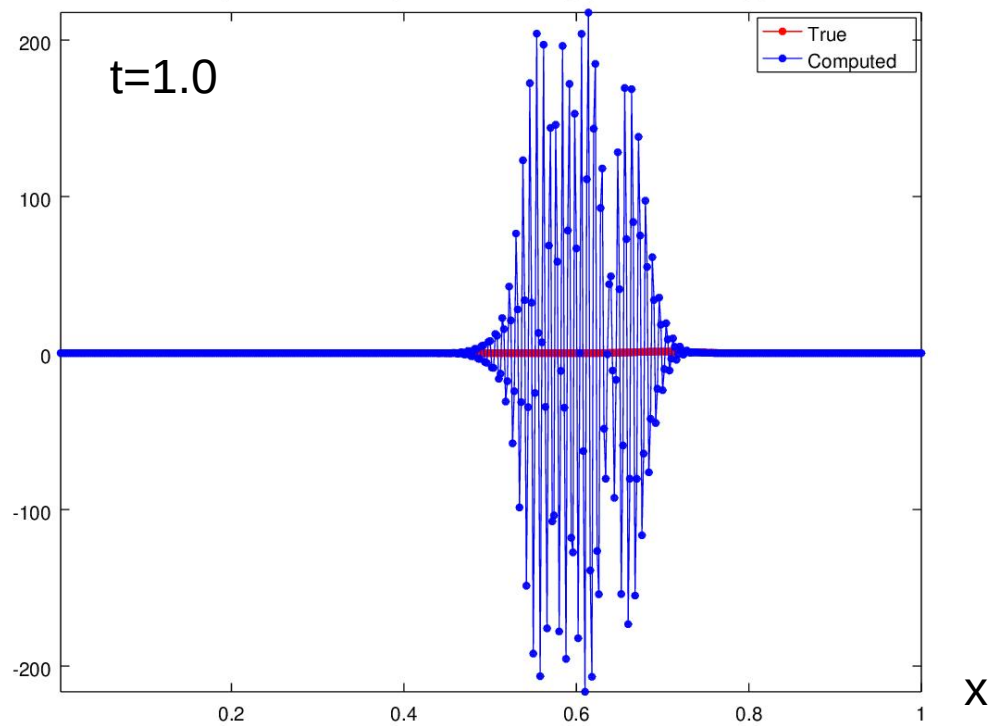
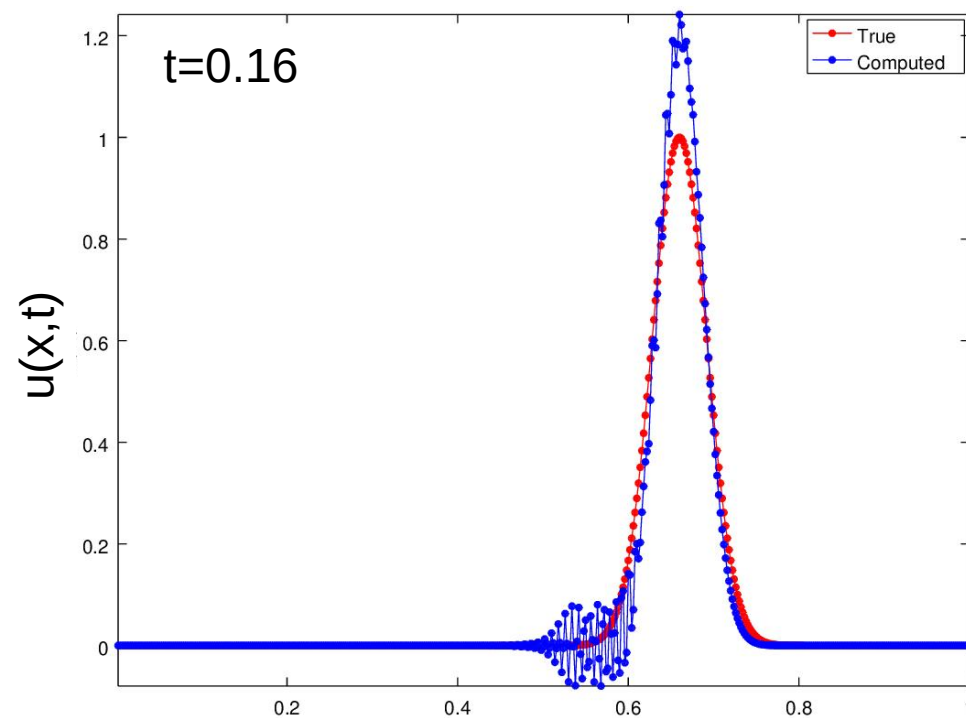
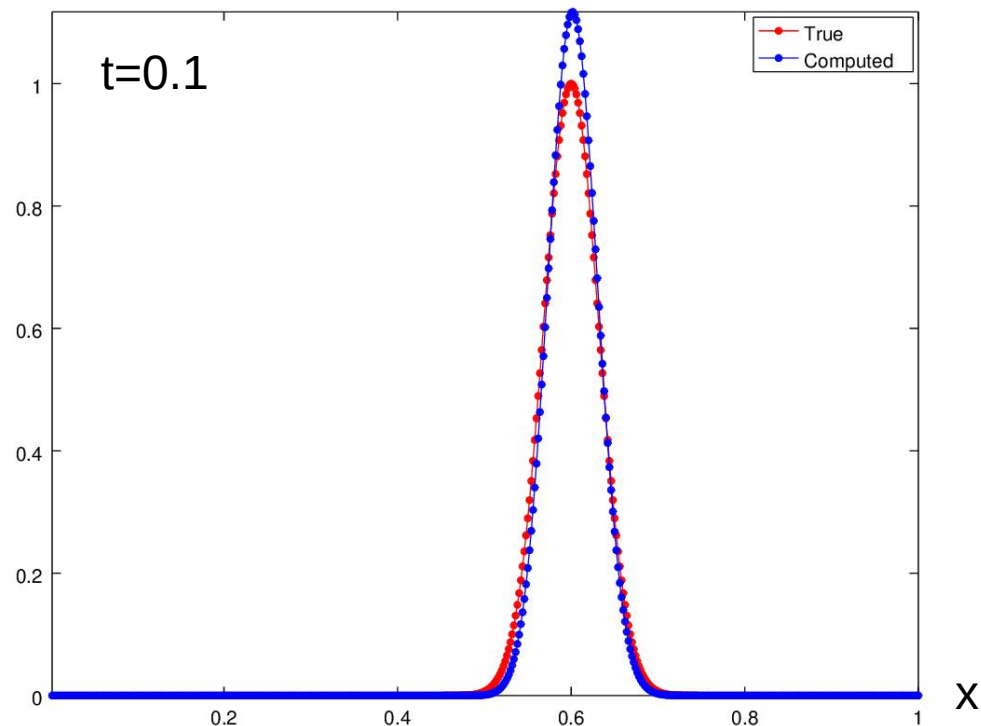
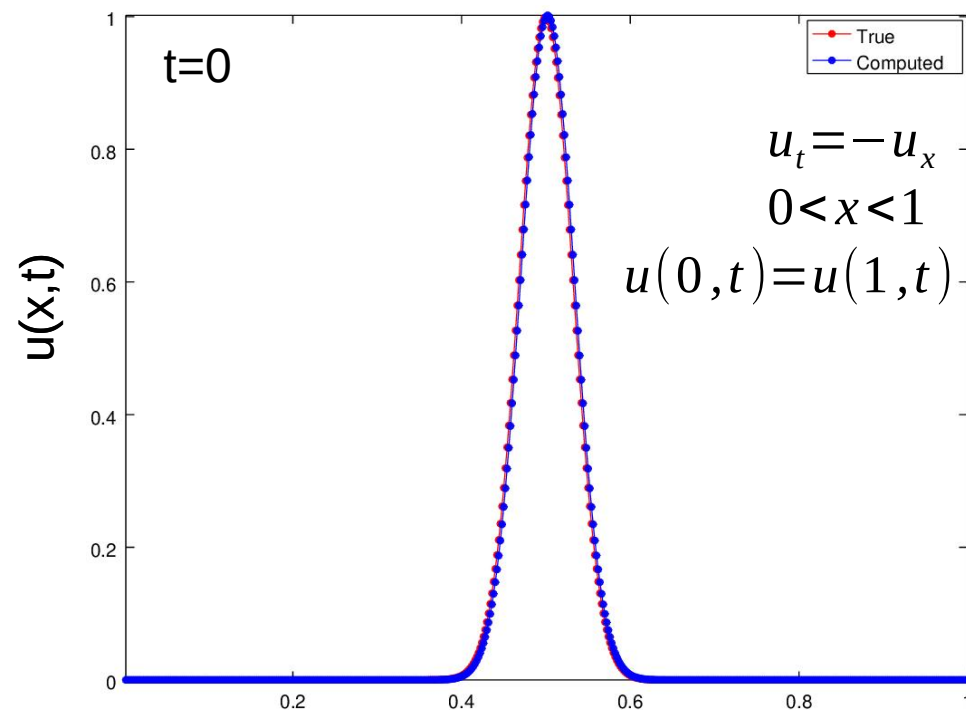
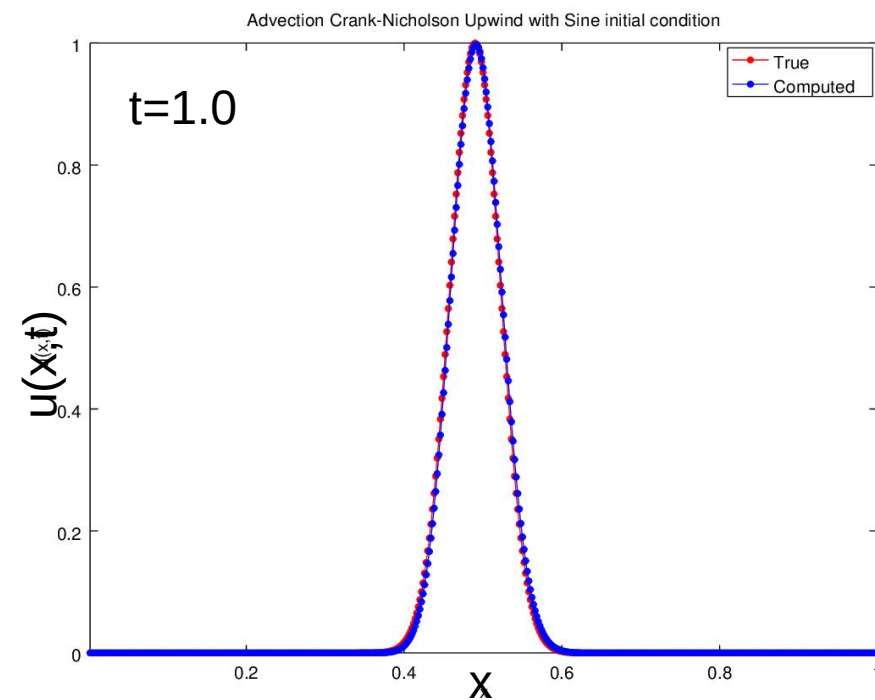
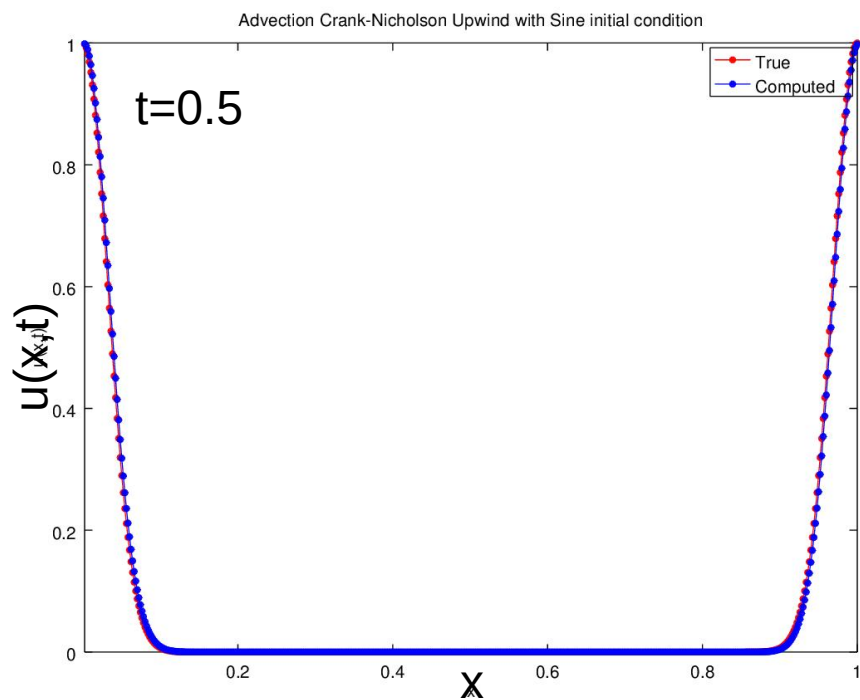
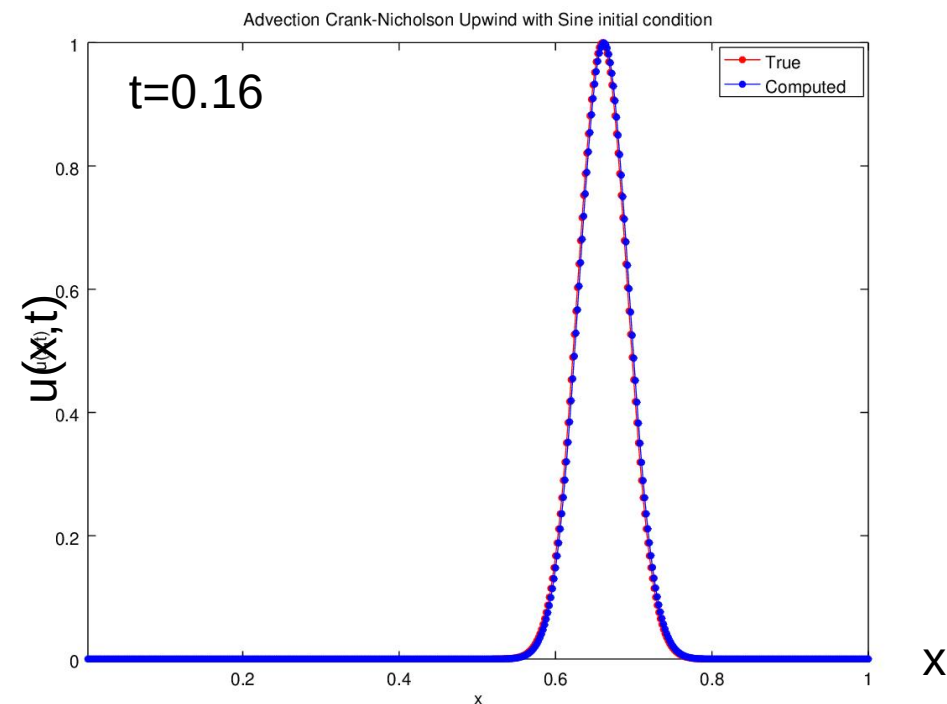
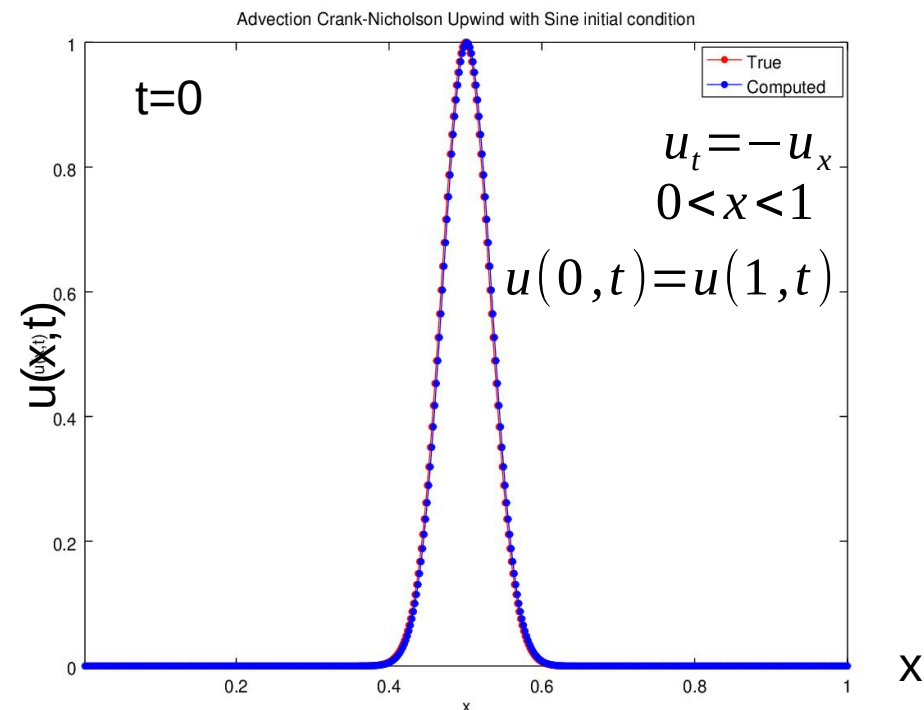


**(A)** Advection Forward Euler scheme (explicit) with  $u(x, 0) = \sin(\pi x)^{100}$



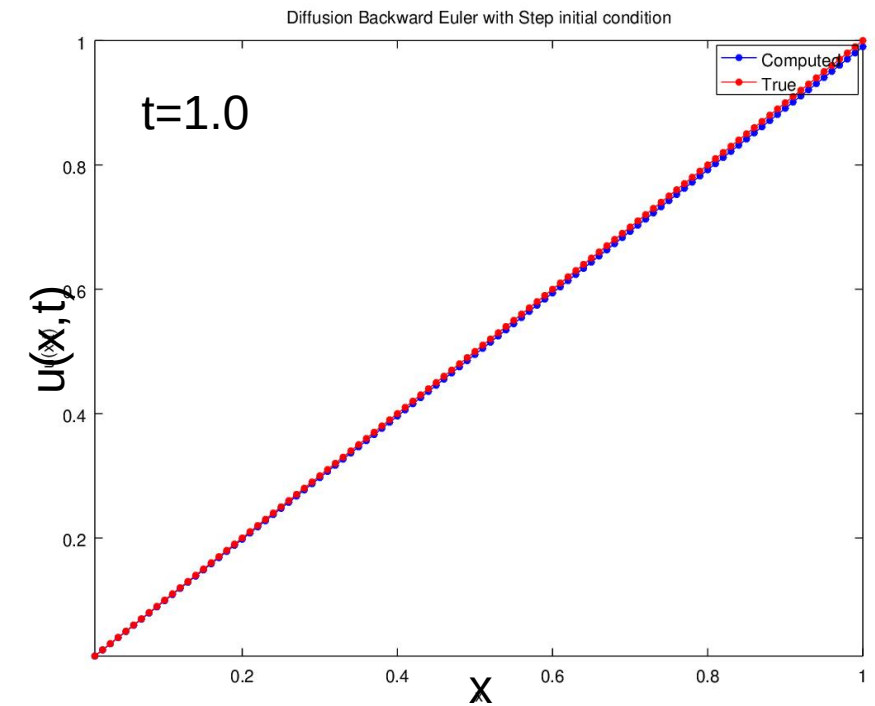
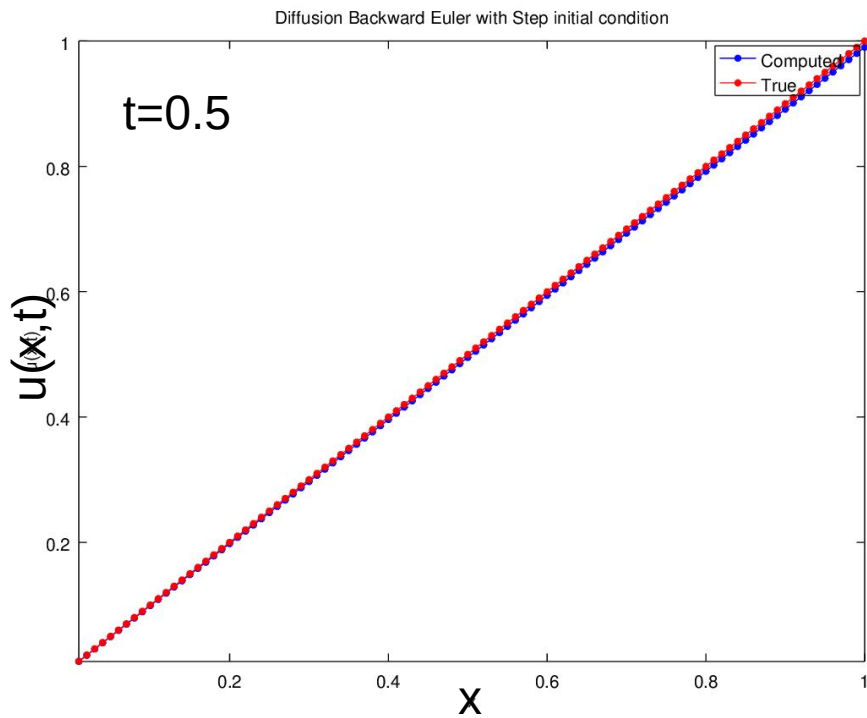
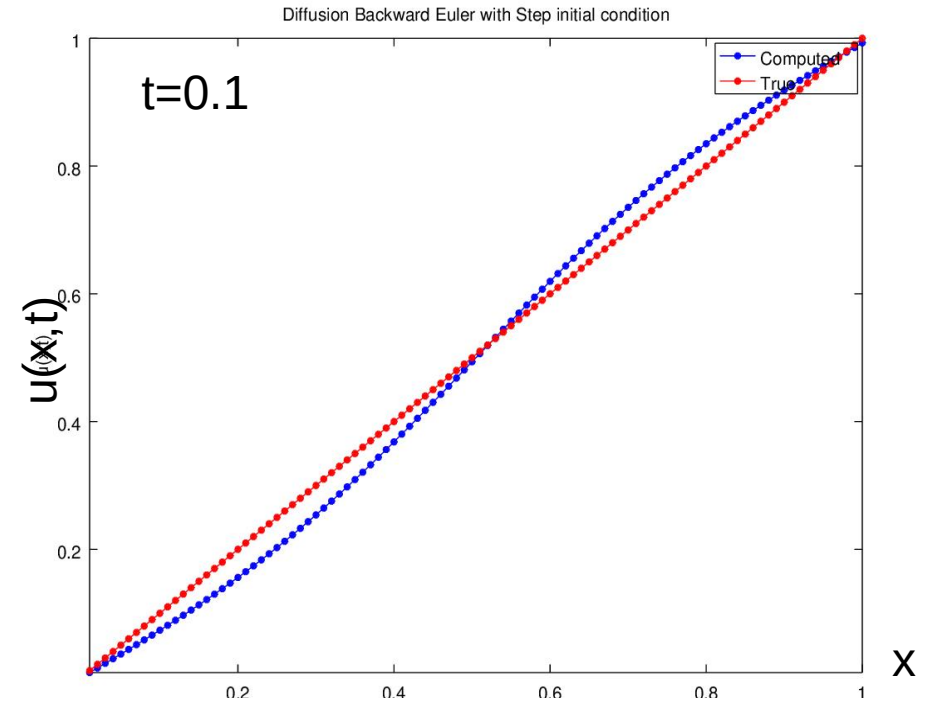
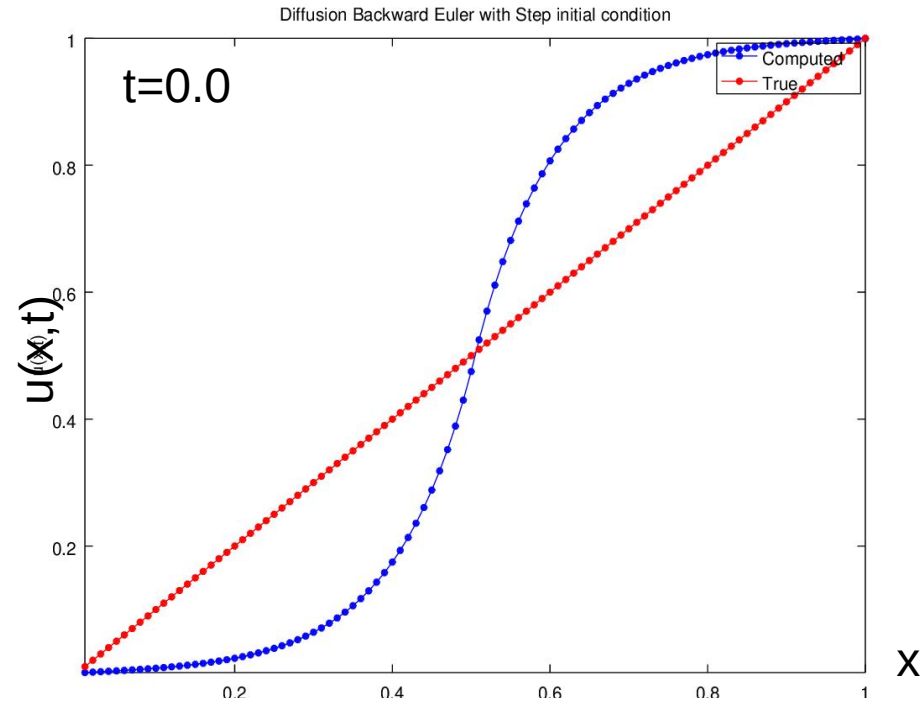
# Advection Crank-Nicholson (3<sup>rd</sup> order Upwind scheme) (implicit) with $u(x,0)=\sin(\pi x)^{100}$

(B)





# Diffusion Backward Euler scheme (implicit) with Step Initial condition



(D)

# Diffusion Crank-Nicholson scheme (implicit) with Step Initial condition

