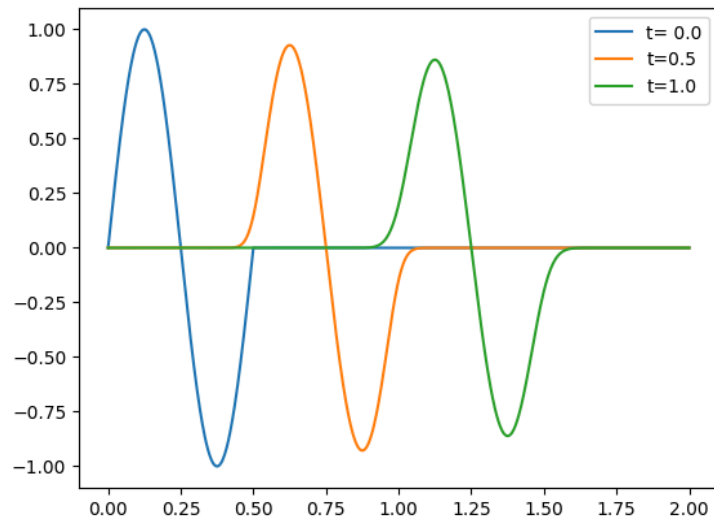


Assignment 2

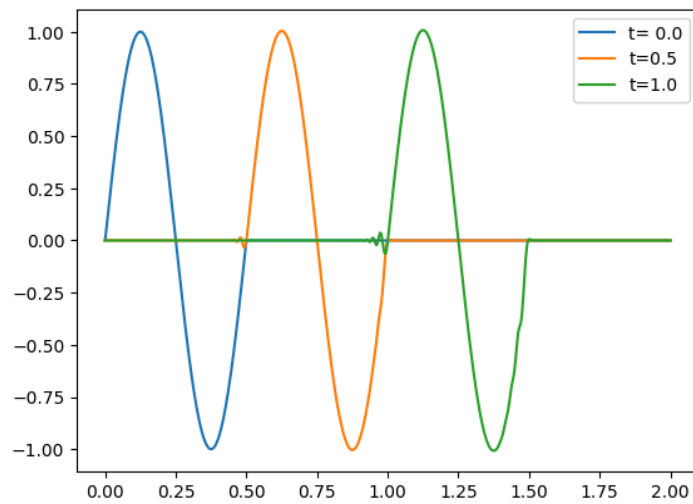
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Q1

(a) $P=1$

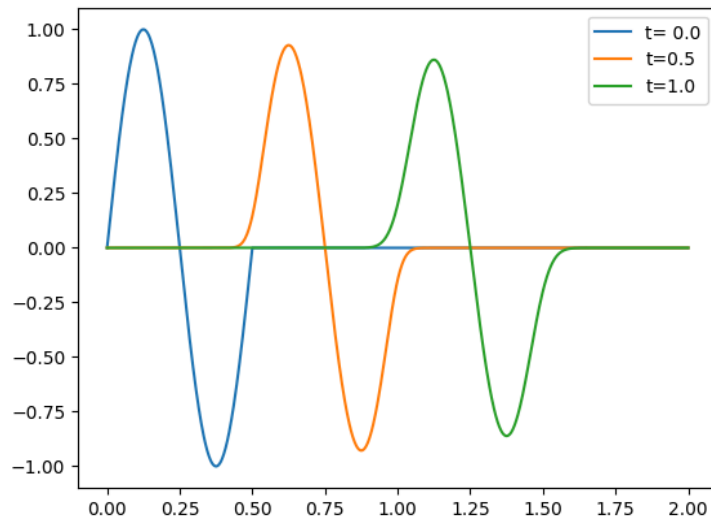


Upwind Scheme

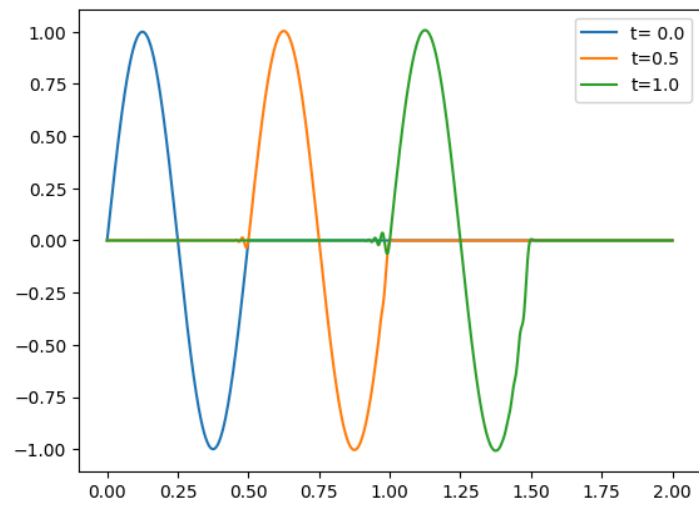


Quick Scheme

(b) $P=2$

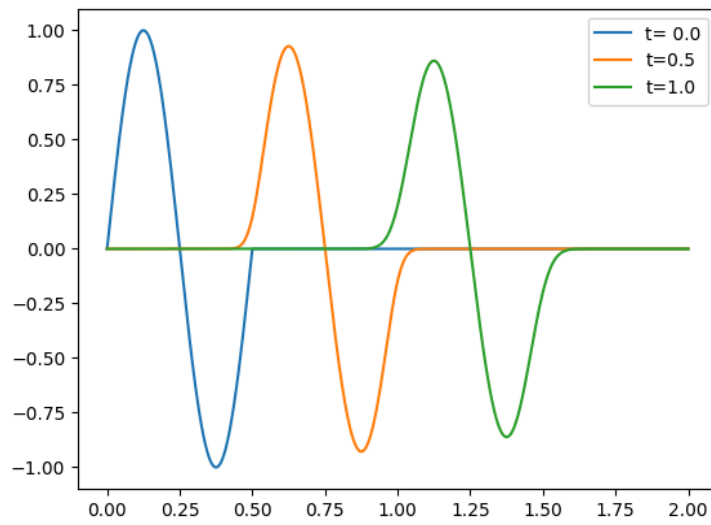


Upwind Scheme

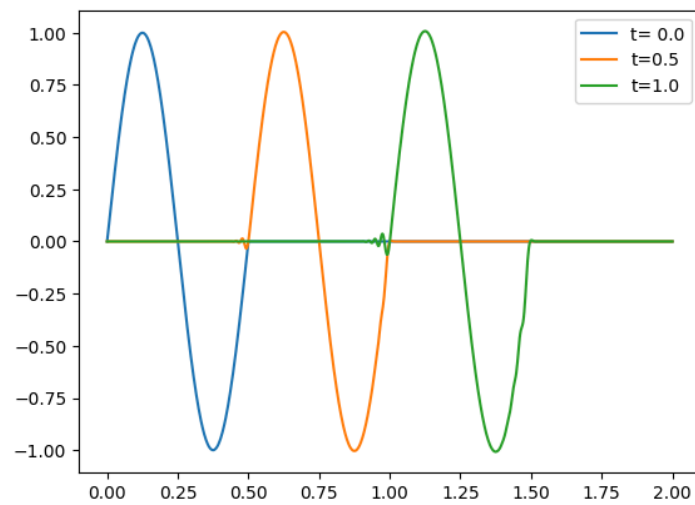


Quick Scheme

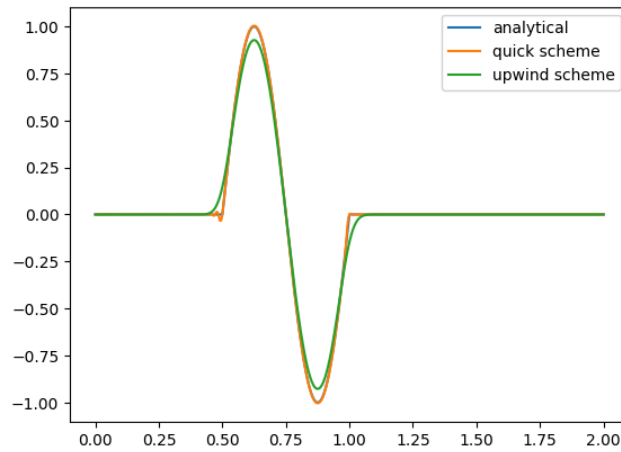
P=4



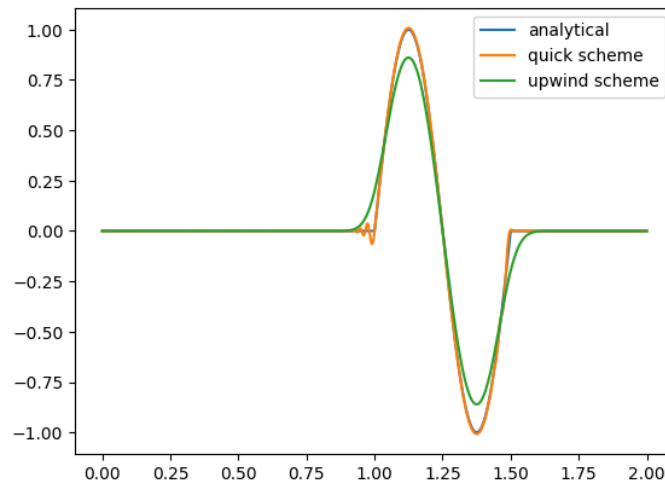
Upwind Scheme



Quick Scheme



$t=0.5$

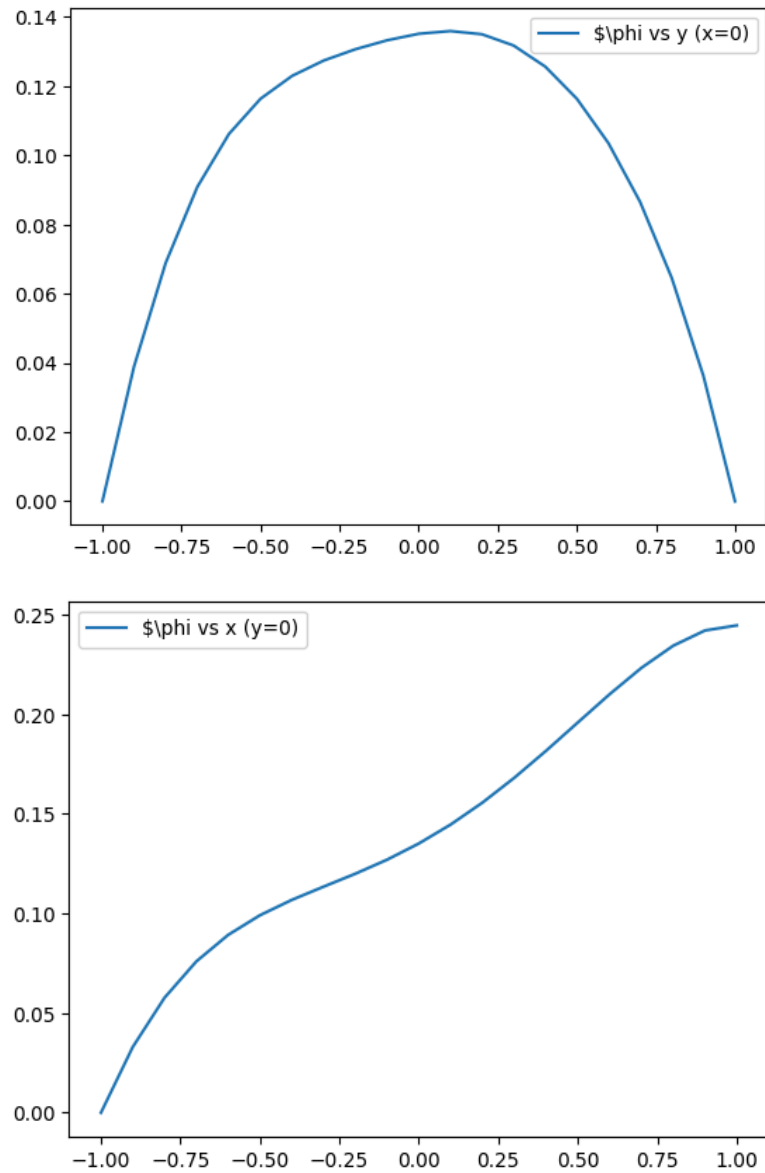


$t=1.0$

(c) The quick scheme is way more accurate than the upwind scheme because it's the higher order function. But the upwind scheme is computationally easier to do and parallelise.

2.

(a) Iteration Count : 387



(b)

(c) The number of iterations required by the Gauss Seidel red-black approach is lesser as compared to Jacobi iterative methods.