

Critical observations

FTFS Scheme

CFL(NU)	Cond1	Cond2	Cond3	Cond4	Cond5
Nu=0.5	NO	NO	NO	NO	NO
Nu=1	NO	NO	NO	NO	NO
Nu=1.5	NO	NO	NO	NO	NO

FTCS Scheme

CFL(NU)	Cond1	Cond2	Cond3	Cond4	Cond5
Nu=0.5	NO	NO	NO	NO	NO
Nu=1	NO	NO	NO	NO	NO
Nu=1.5	NO	NO	NO	NO	NO

FTBS Scheme

CFL(NU)	Cond1	Cond2	Cond3	Cond4	Cond5
Nu=0.5	NO	NO	NO	NO	NO
Nu=1	NO	NO	NO	NO	NO
Nu=1.5	NO	NO	NO	NO	NO

LW Scheme

CFL(NU)	Cond1	Cond2	Cond3	Cond4	Cond5
Nu=0.5	NO	NO	NO	NO	NO
Nu=1	NO	NO	NO	NO	NO
Nu=1.5	NO	NO	NO	NO	NO

BW Scheme

CFL(NU)	Cond1	Cond2	Cond3	Cond4	Cond5
Nu=0.5	NO	NO	NO	NO	NO
Nu=1	NO	NO	NO	NO	NO
Nu=1.5	NO	NO	NO	NO	NO

FR Scheme

CFL(NU)	Cond1	Cond2	Cond3	Cond4	Cond5
Nu=0.5	NO	NO	NO	NO	NO
Nu=1	NO	NO	NO	NO	NO
Nu=1.5	NO	NO	NO	NO	NO

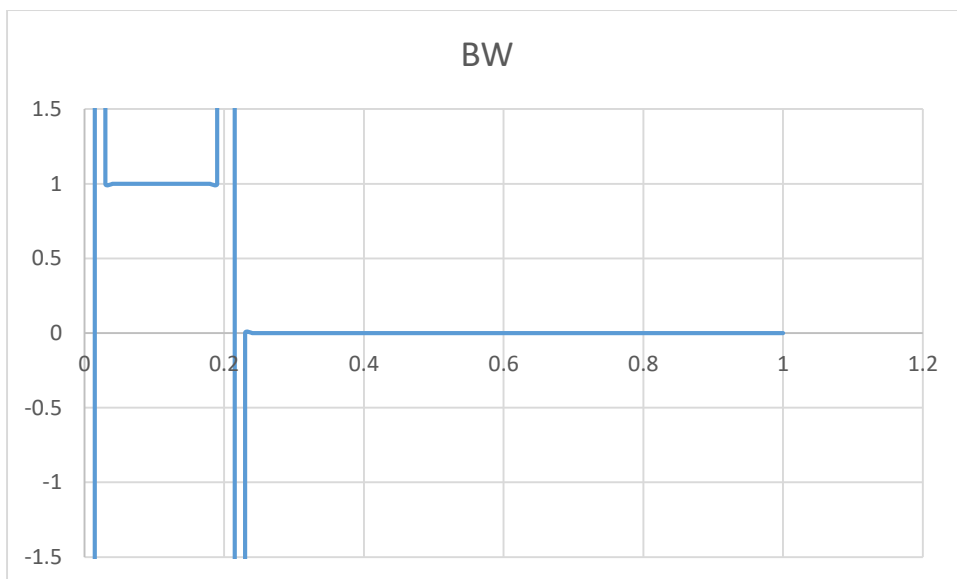
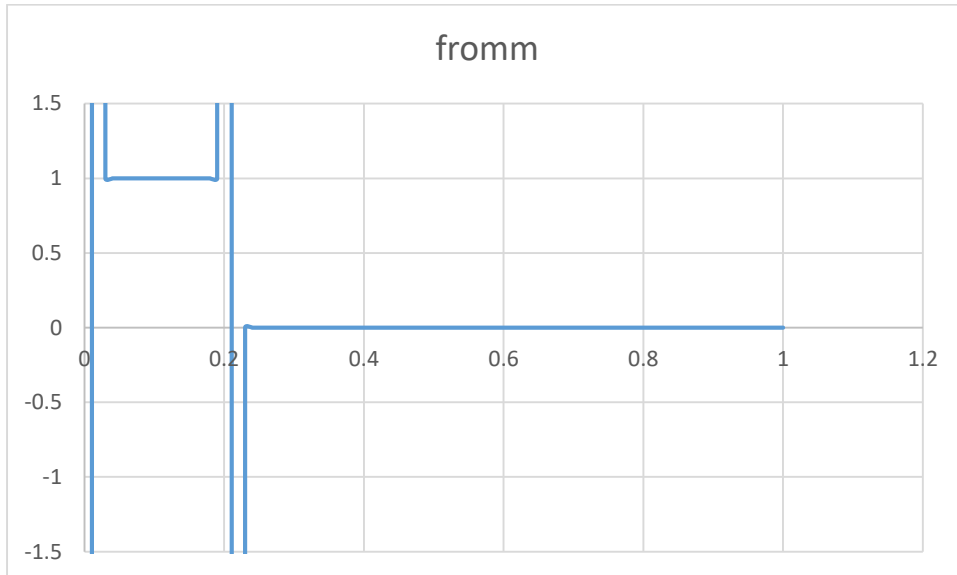
All the values are taken at 40th time step and plotted.

From the above tables and the plots below it is observed that all the conditions for all schemes the value of U is crossing the range -1.5 to 1.5

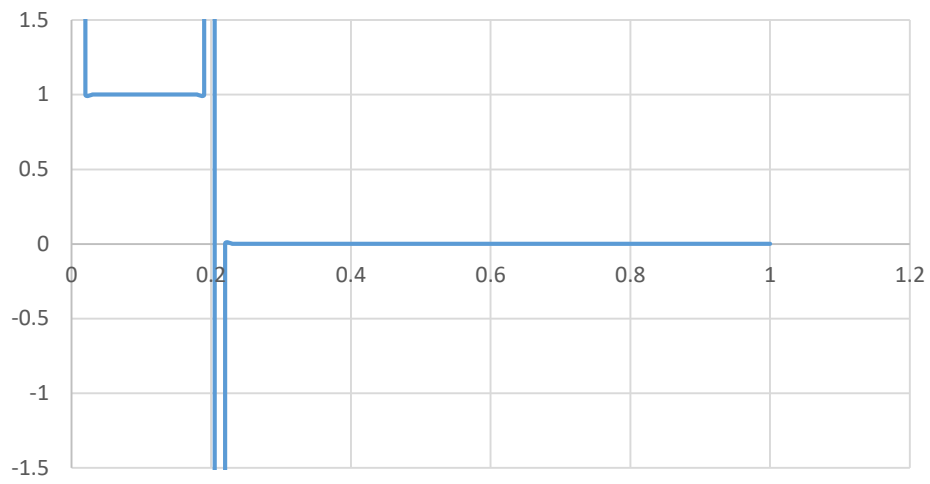
Plots

1st Initial Solution

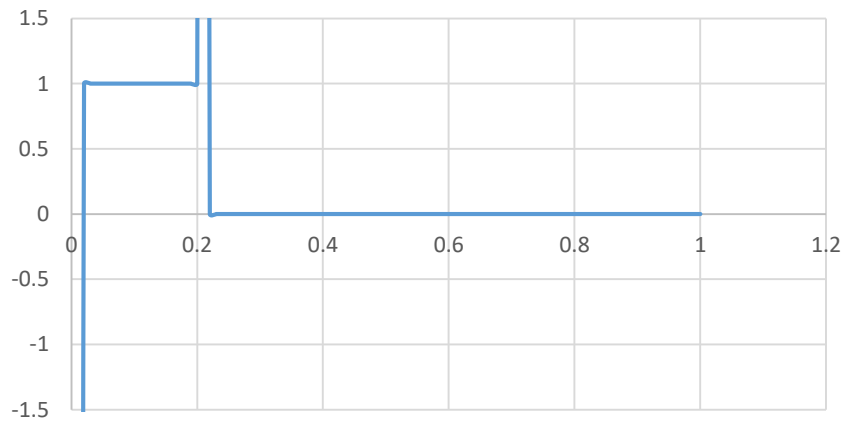
$Nu=0.5$



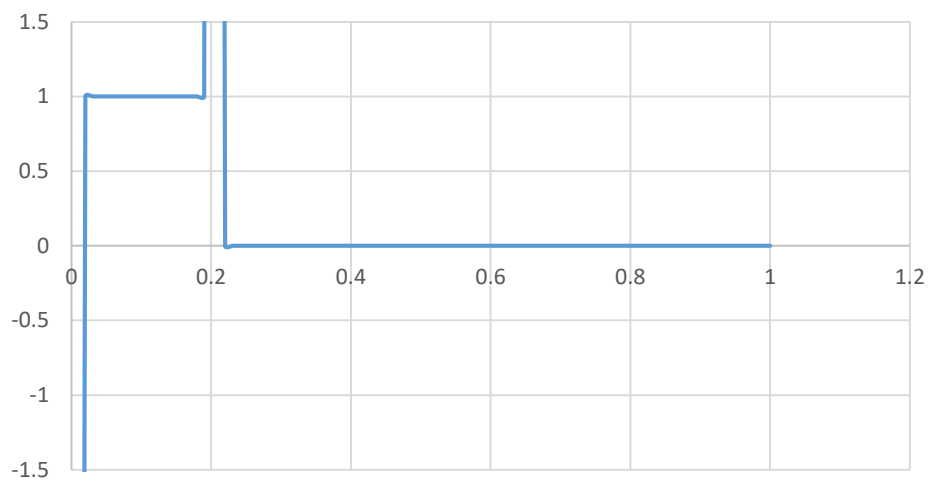
Lax wandroff

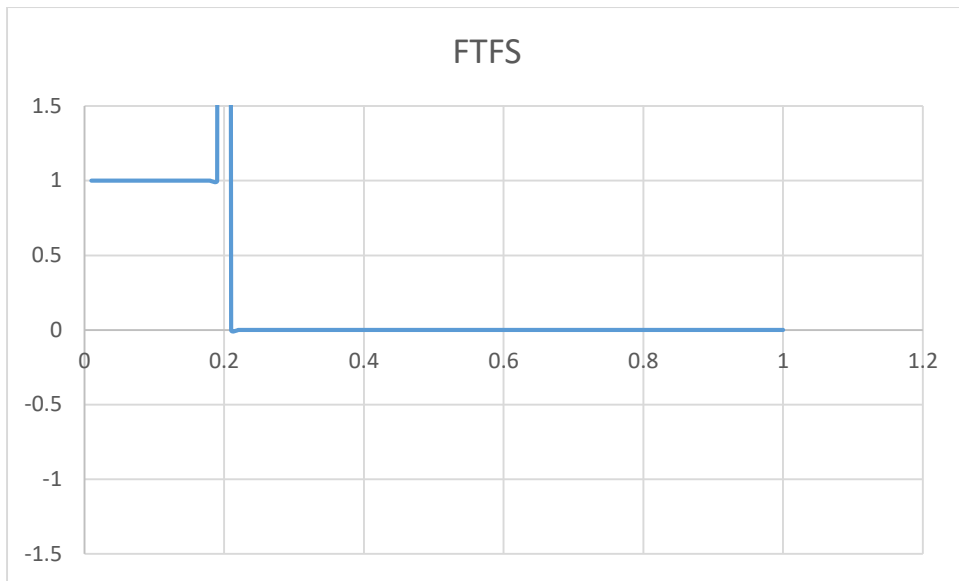


FTBS

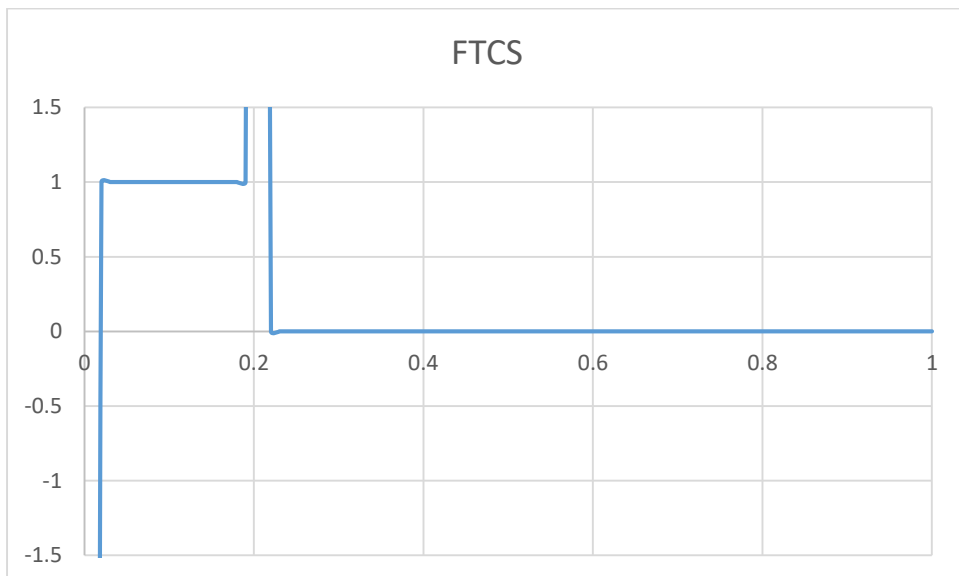
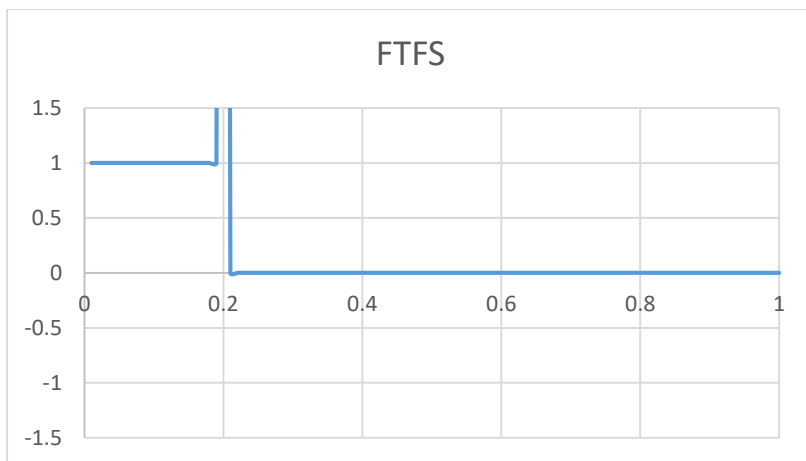


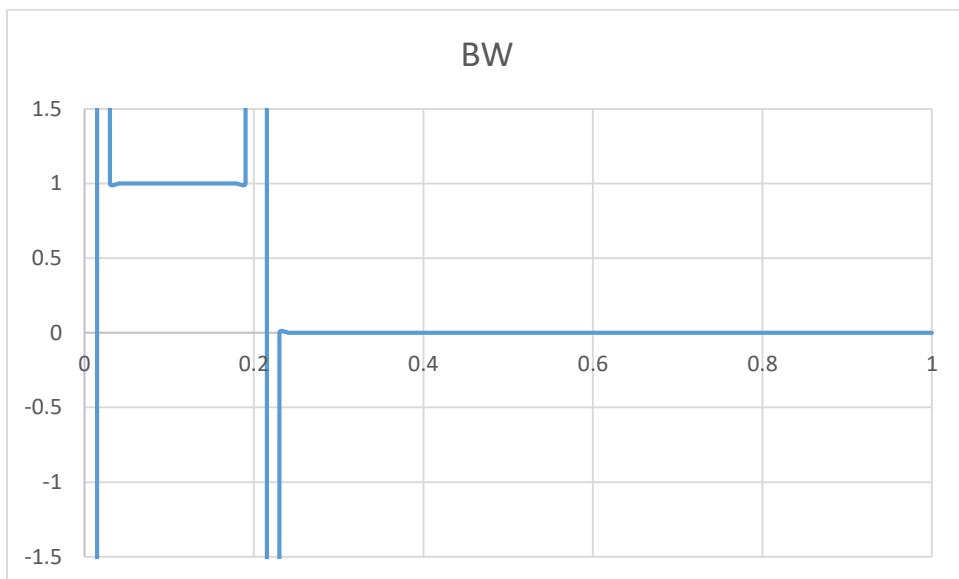
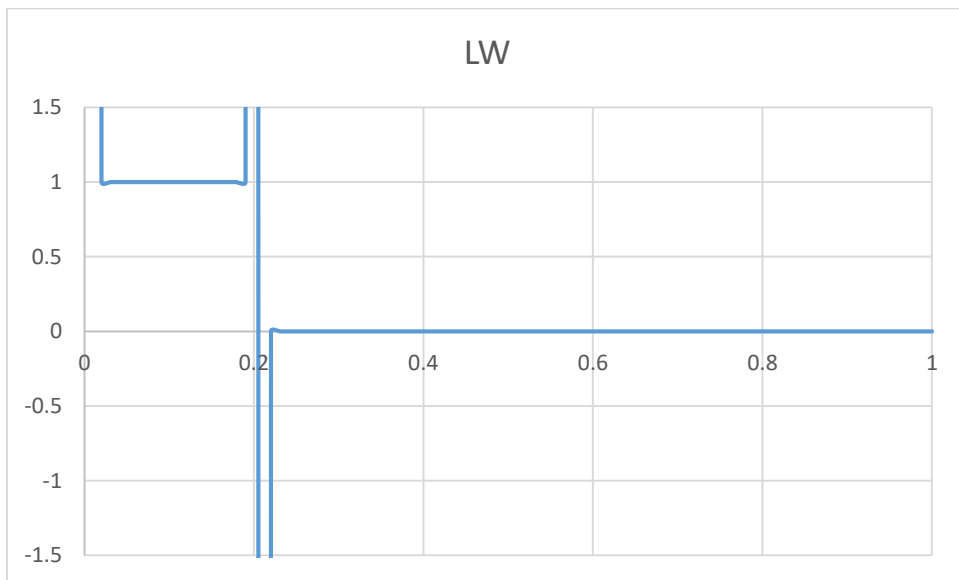
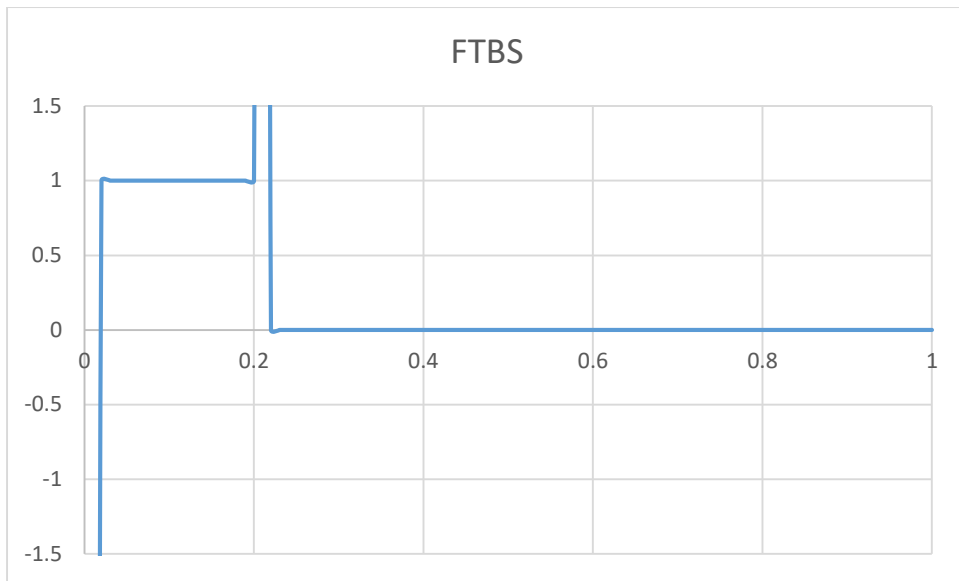
FTCS

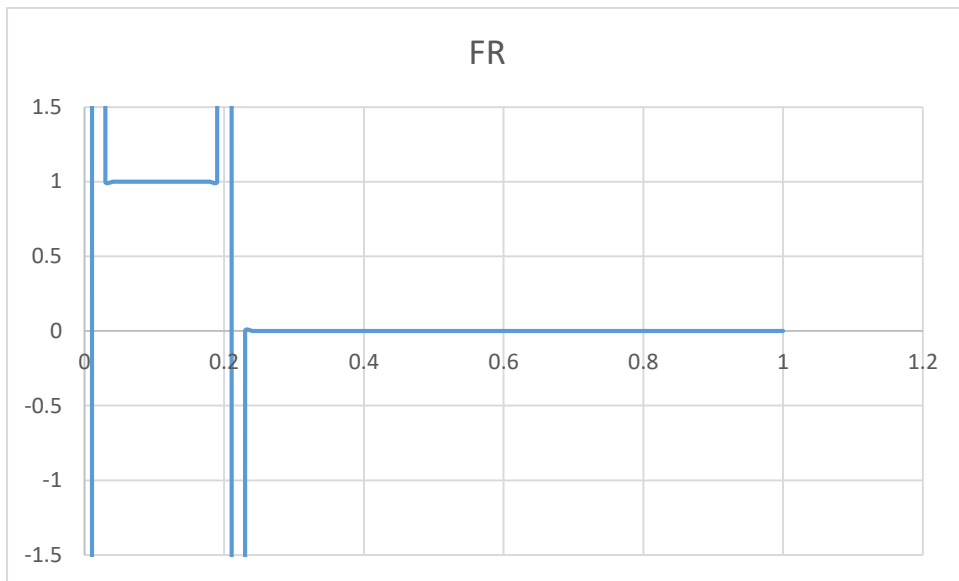




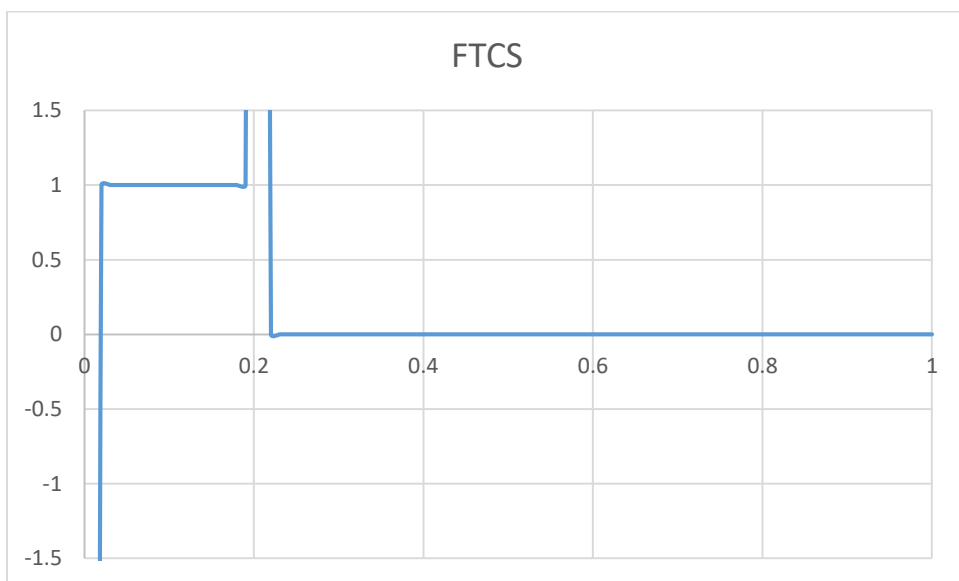
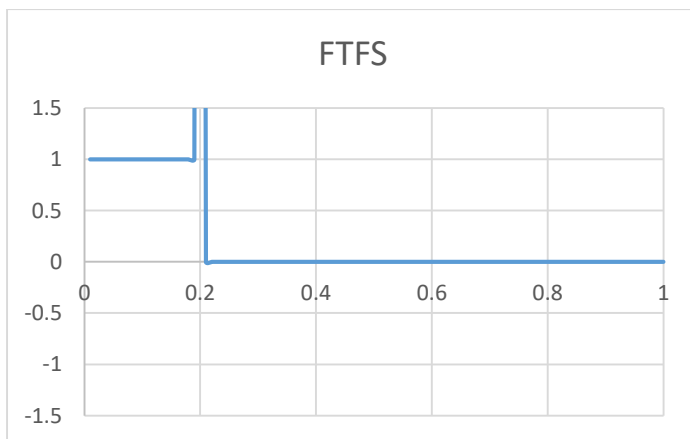
Nu=1

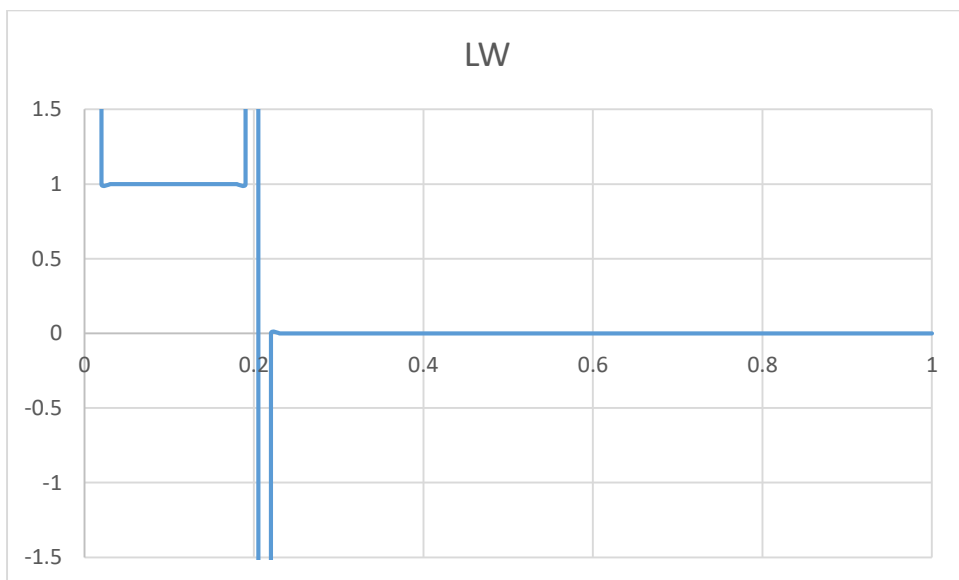
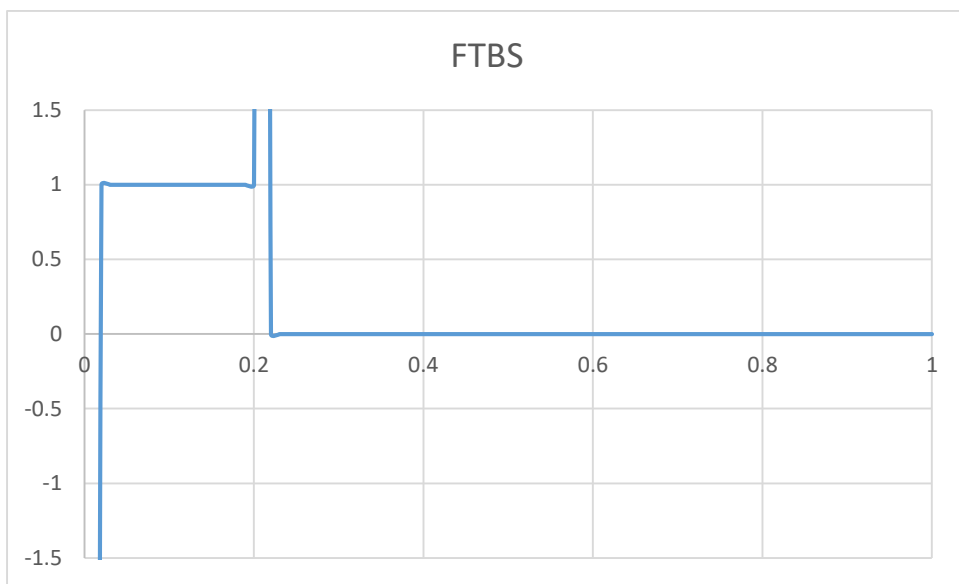


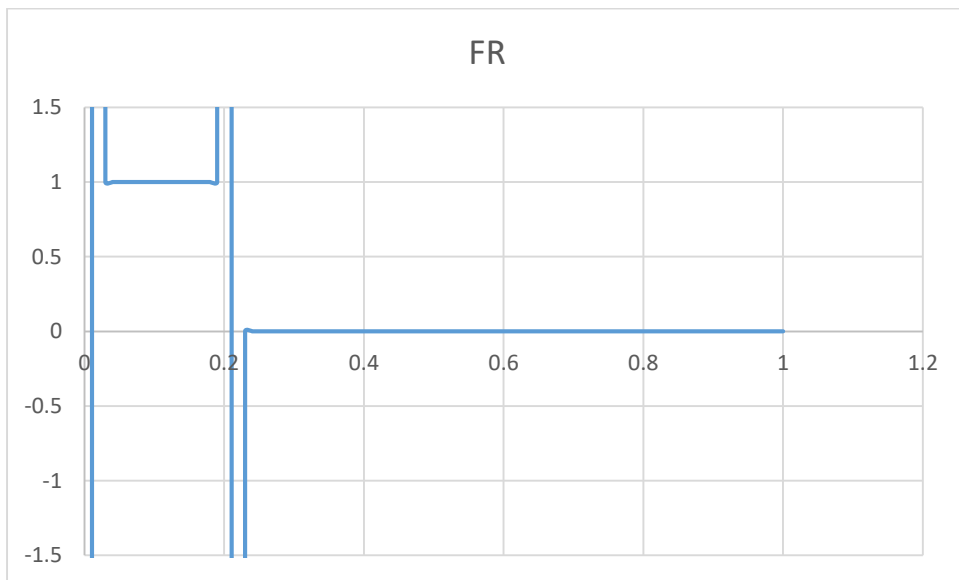
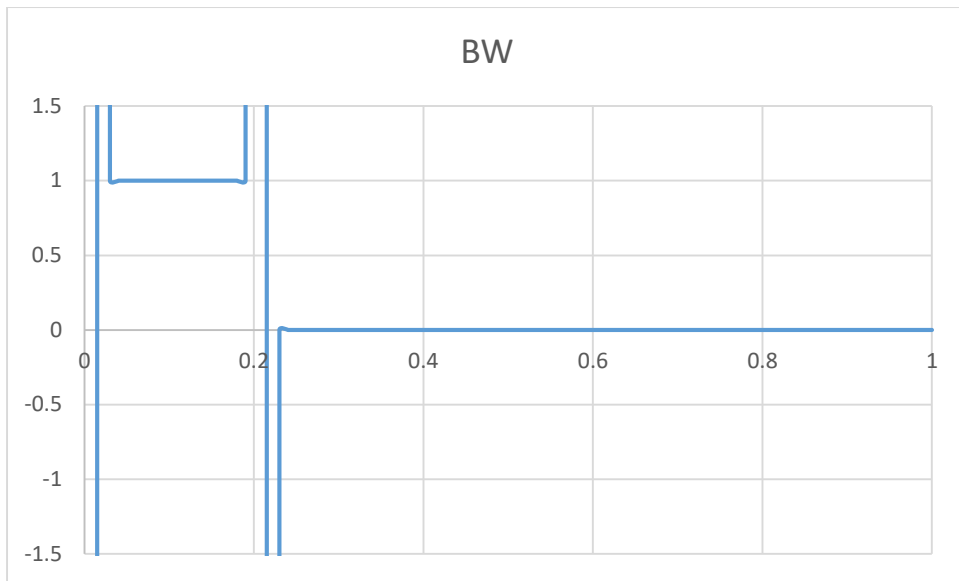




Nu=1.5

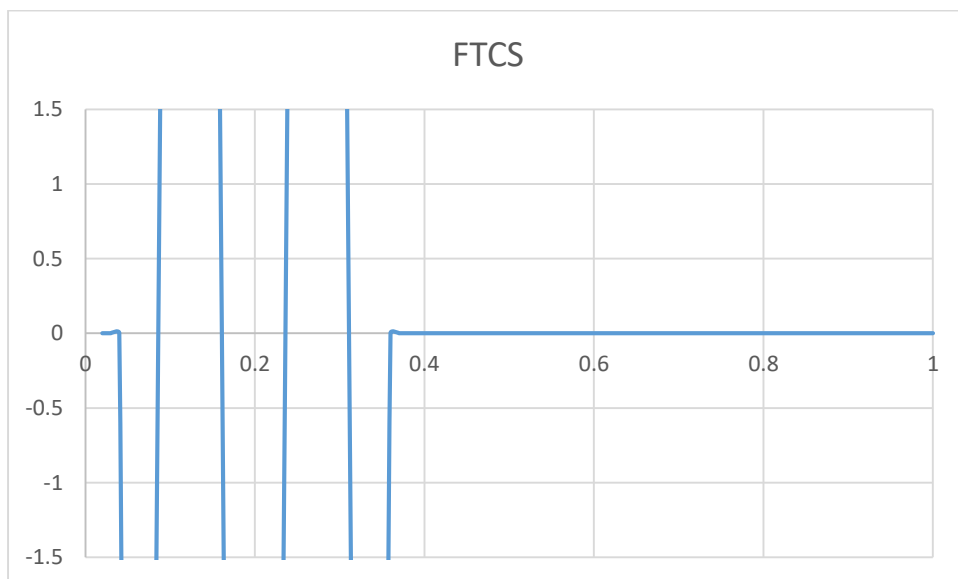
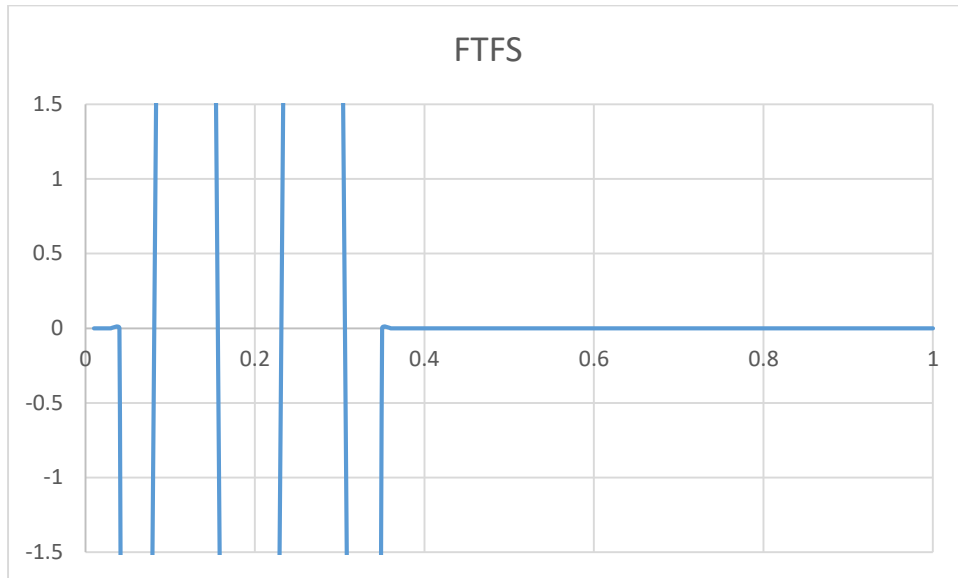


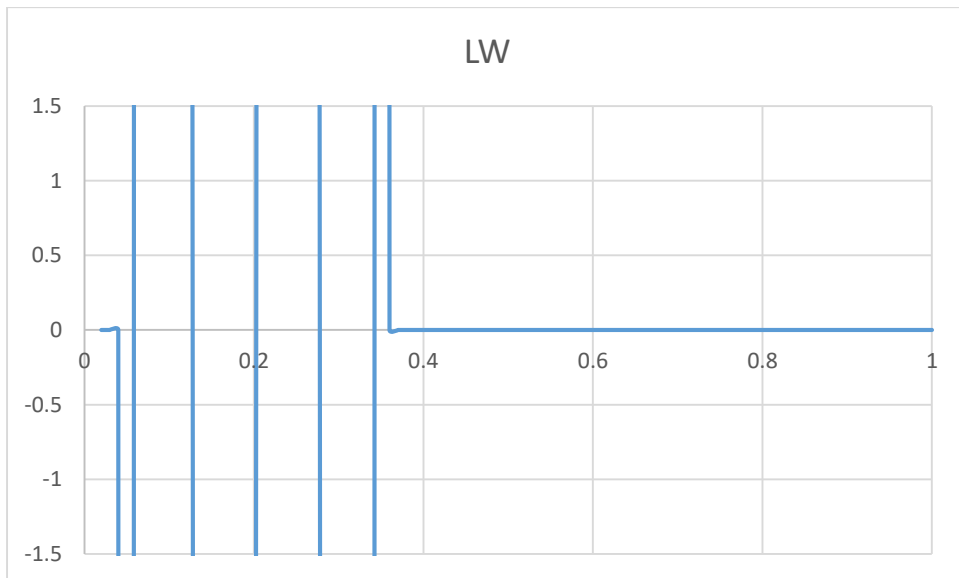
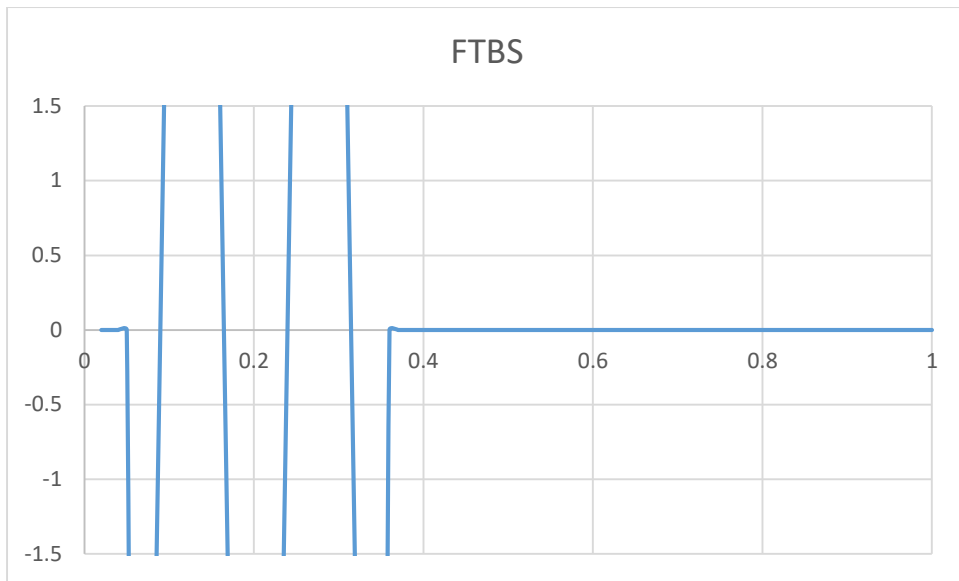


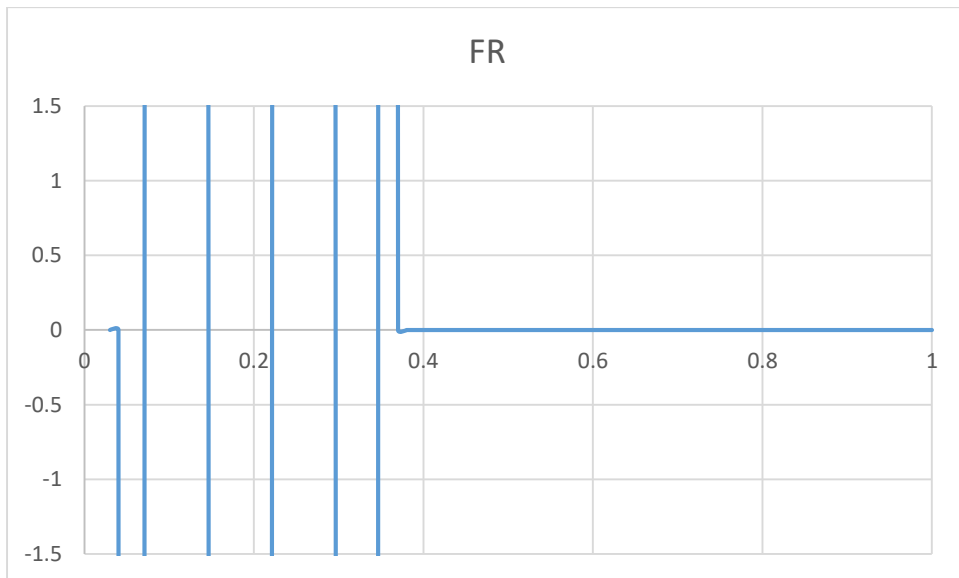
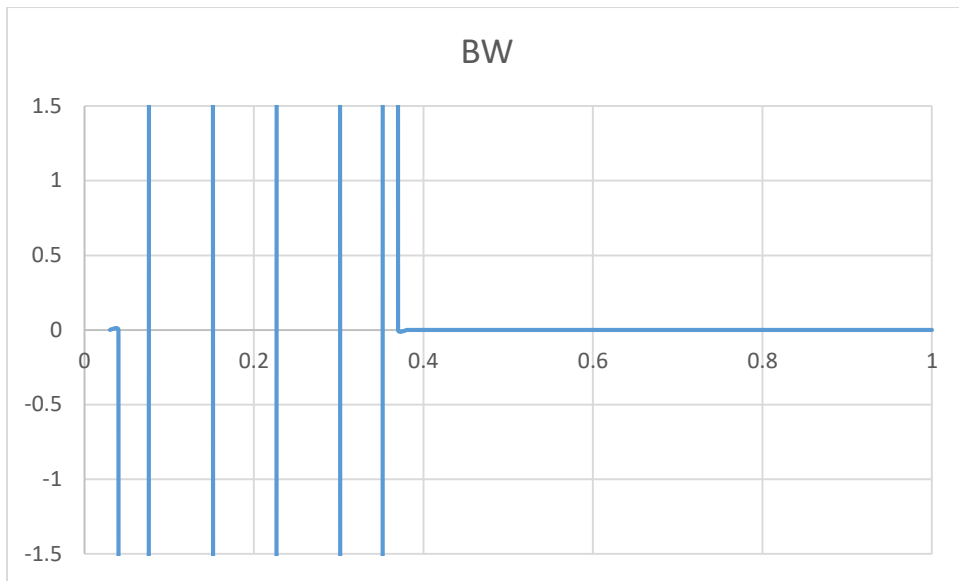


2nd Initial Solution

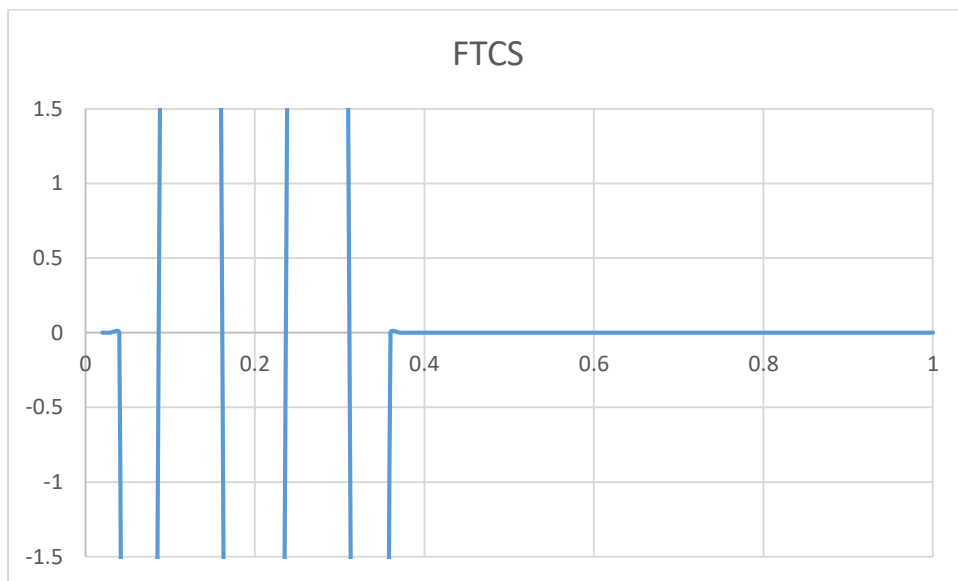
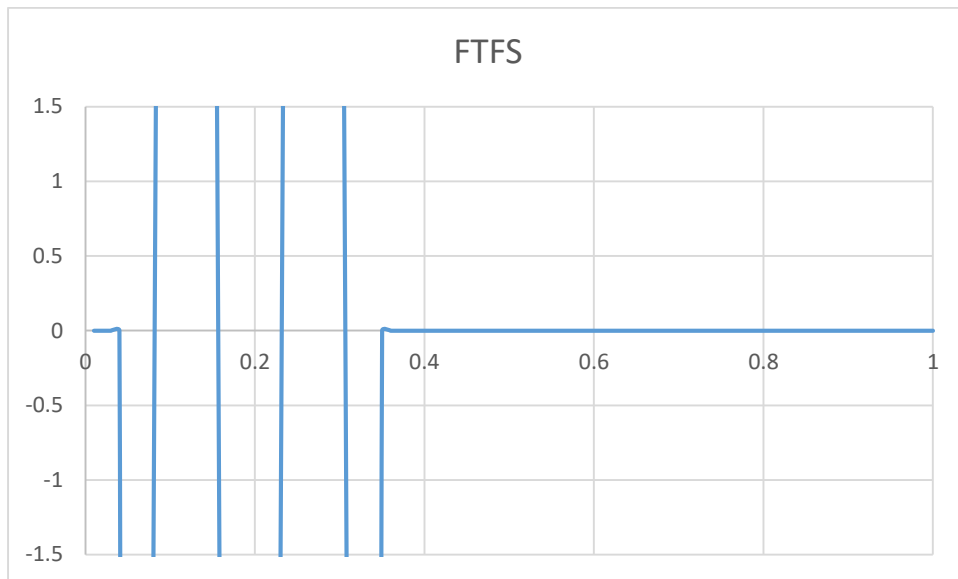
$Nu=0.5$

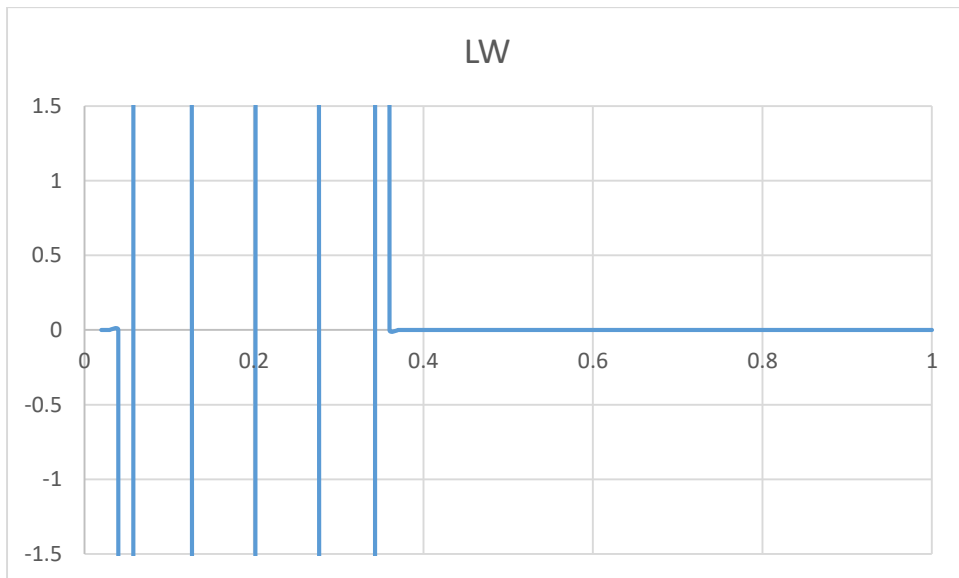
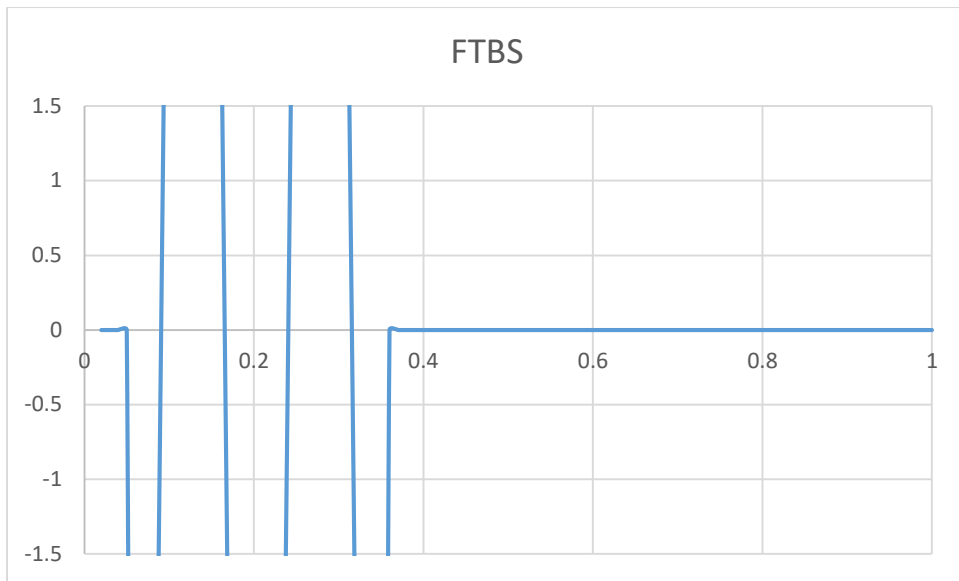


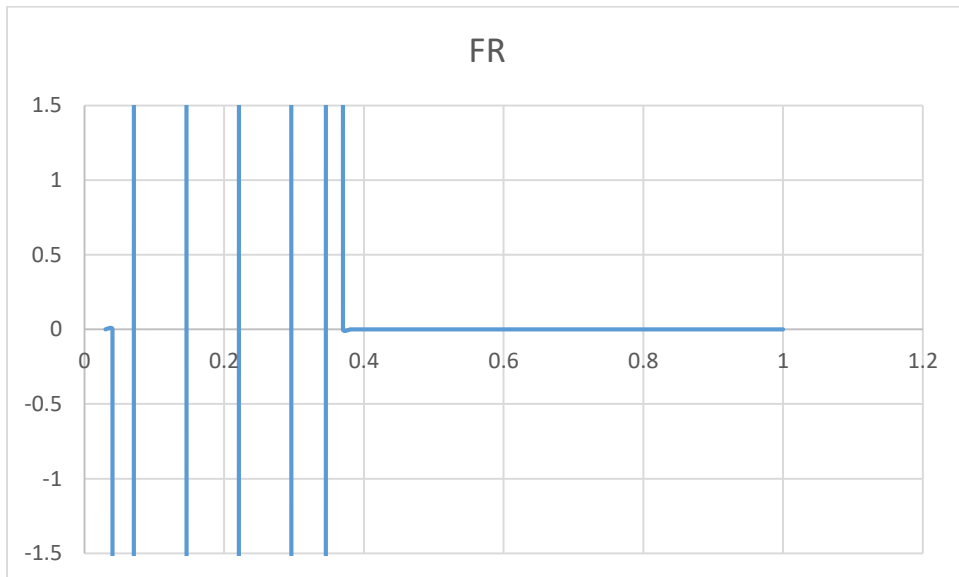
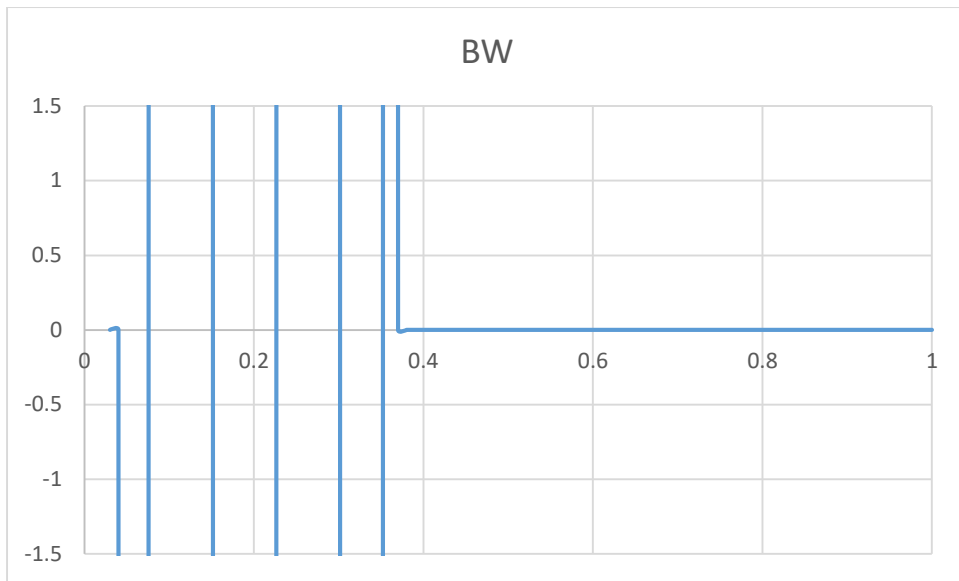




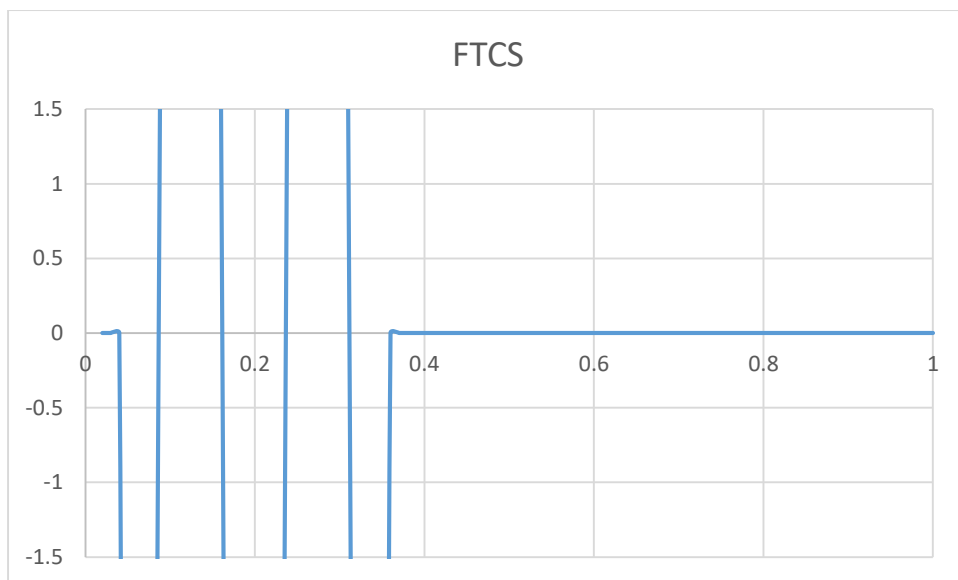
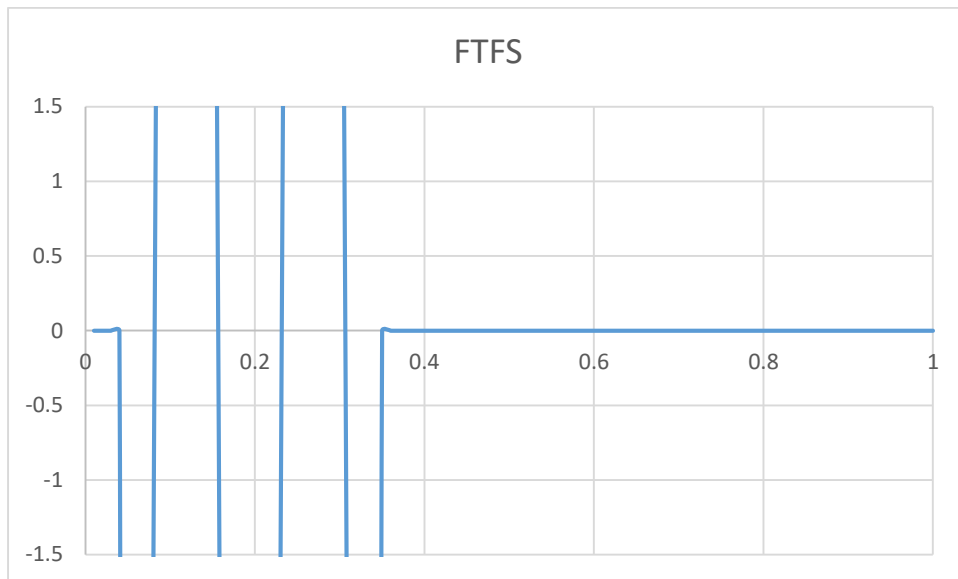
$Nu=1$

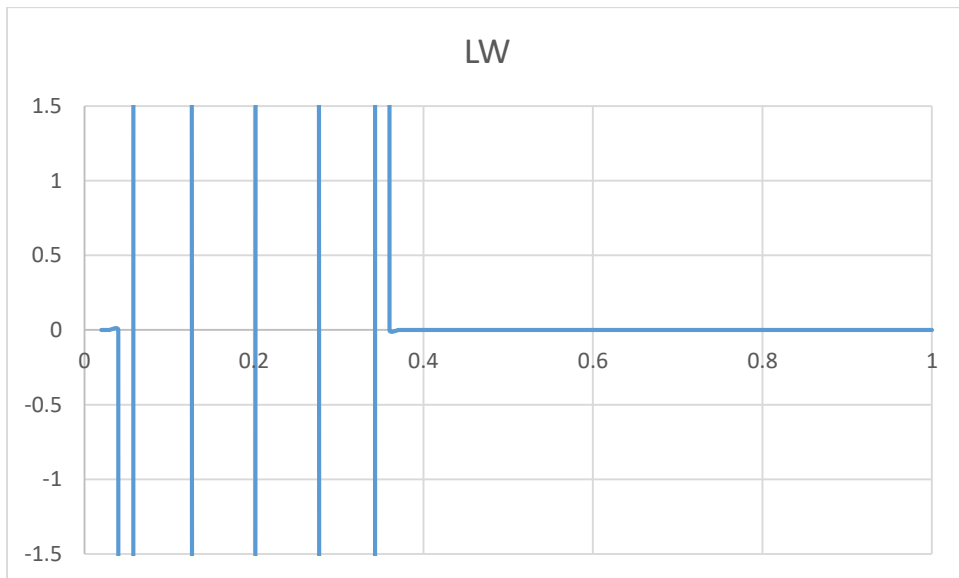
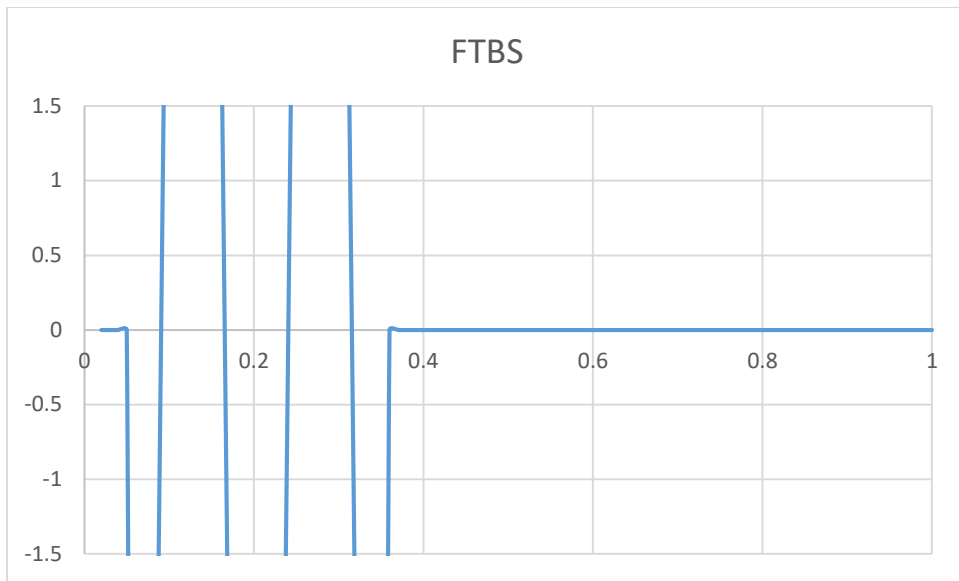


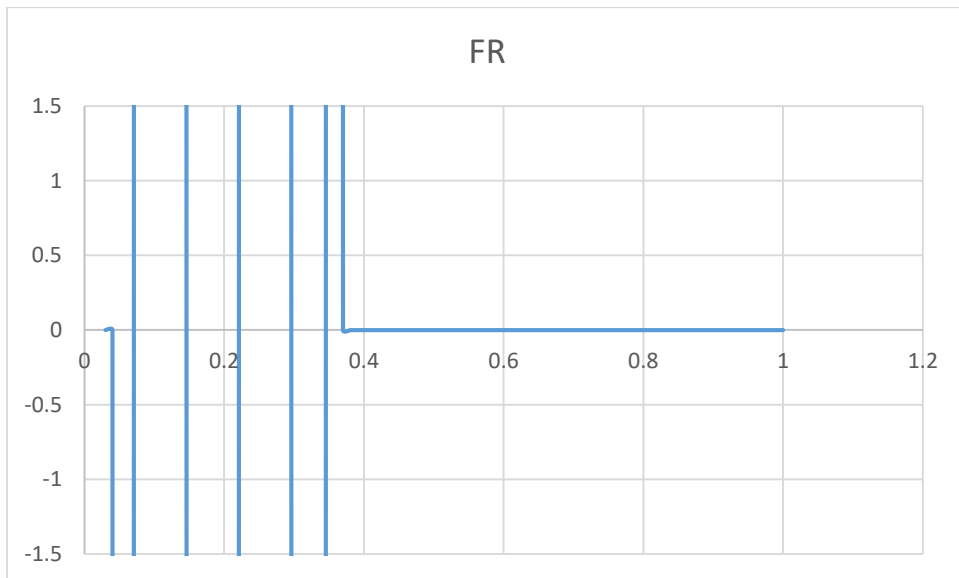
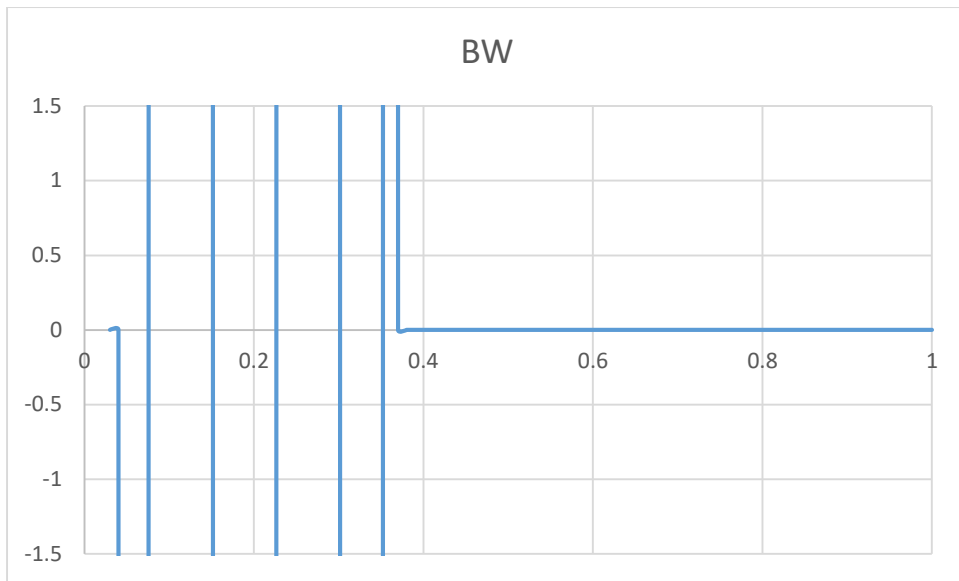




$Nu=1.5$

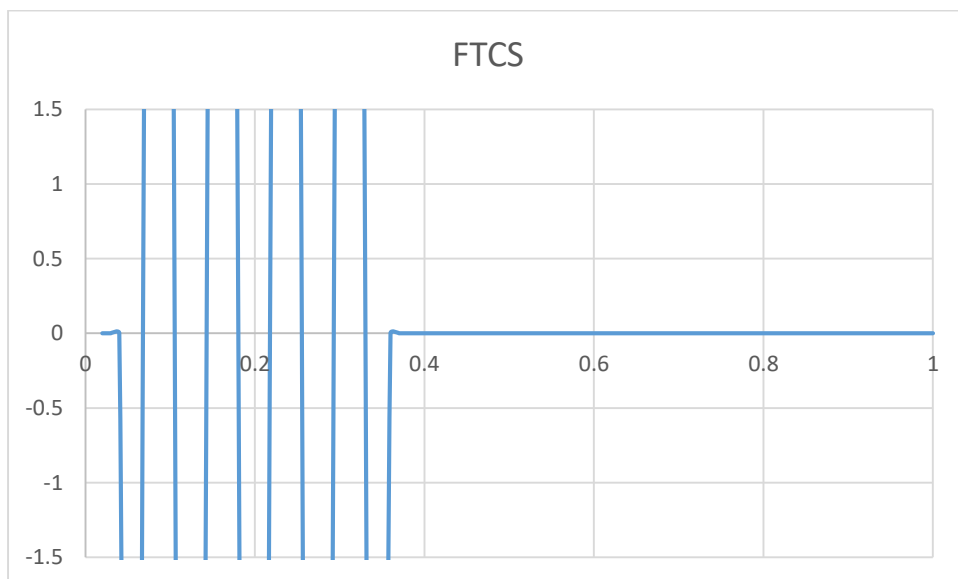
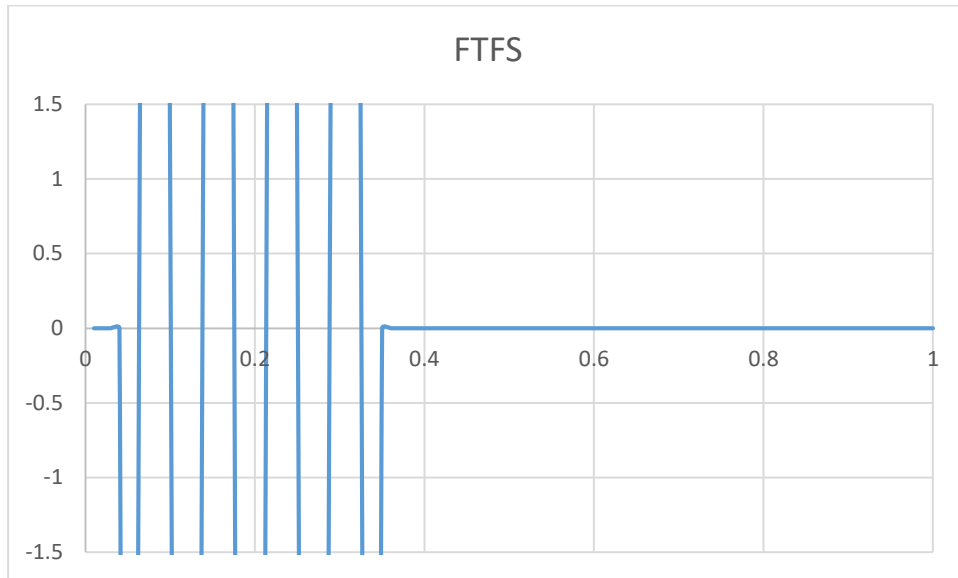


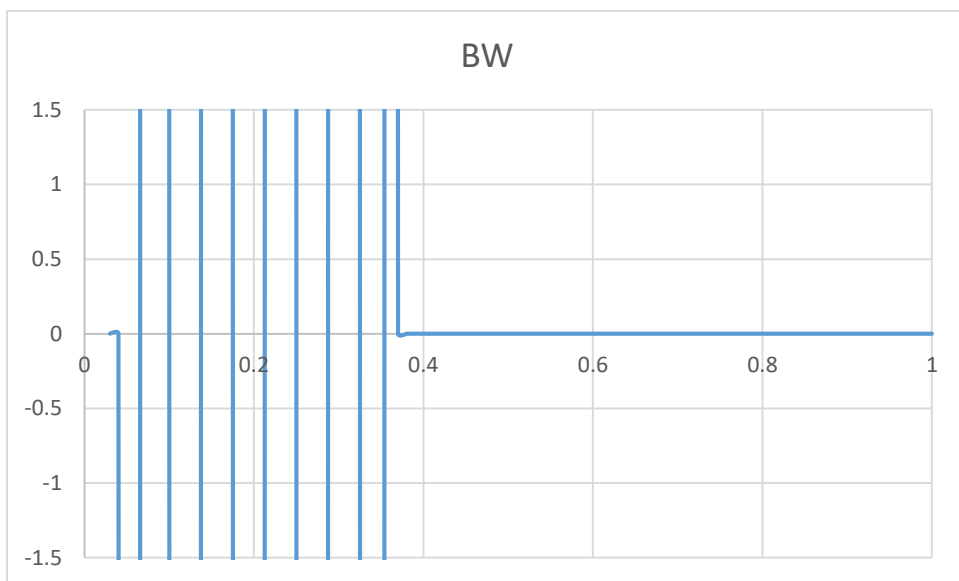
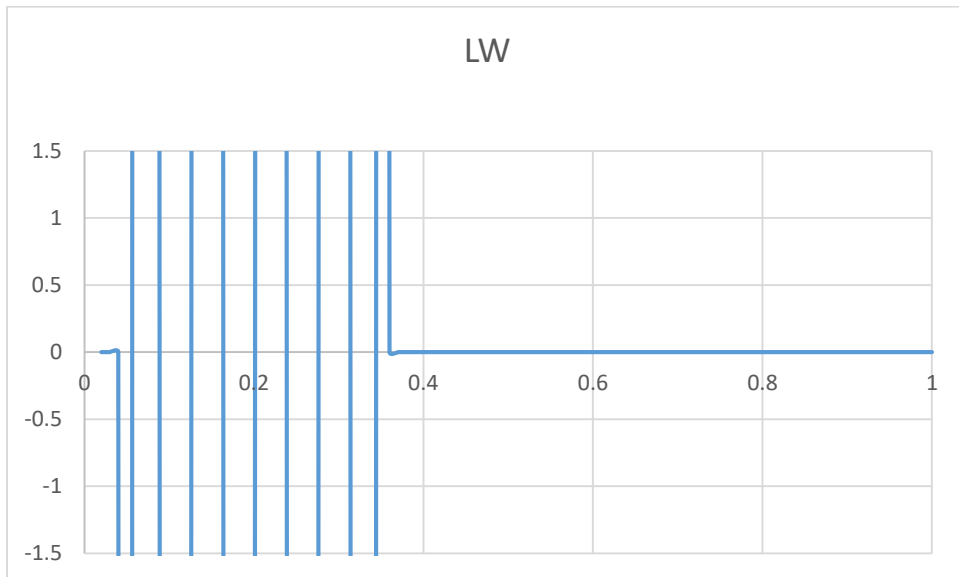
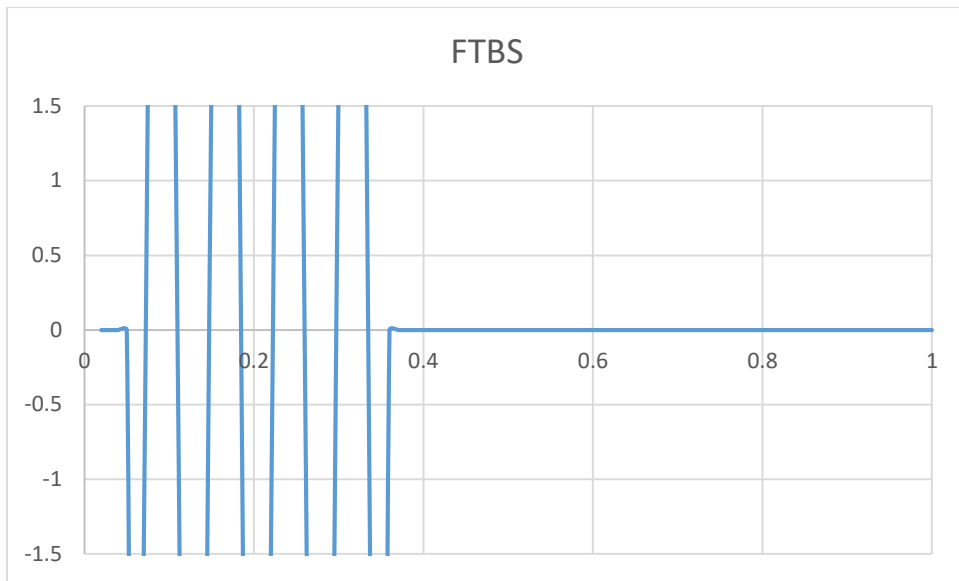


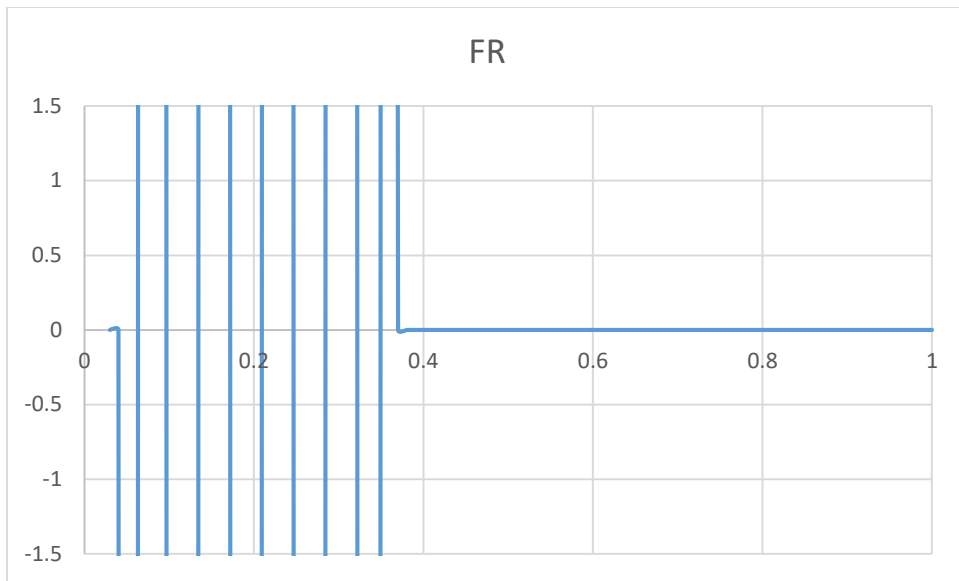


3rd Initial Solution

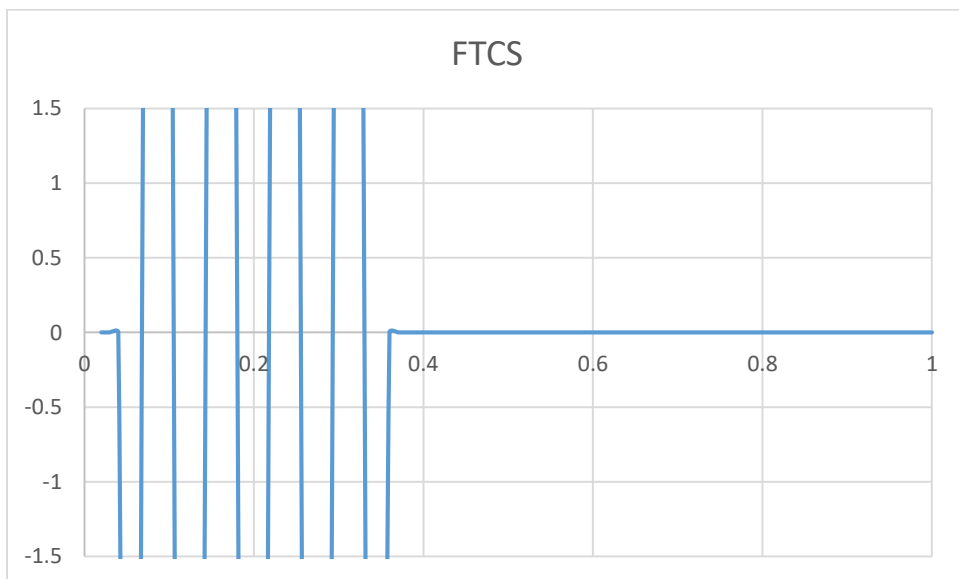
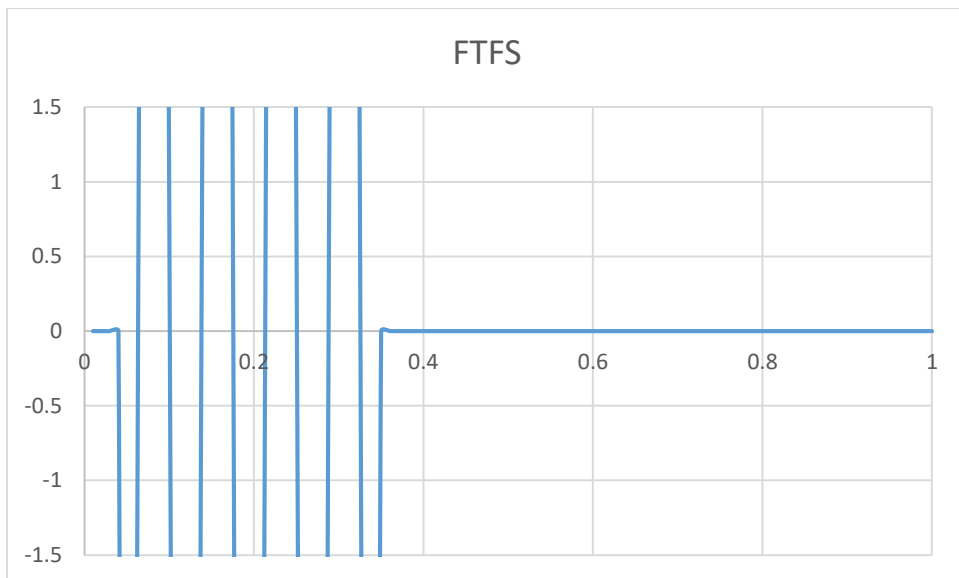
$Nu=0.5$

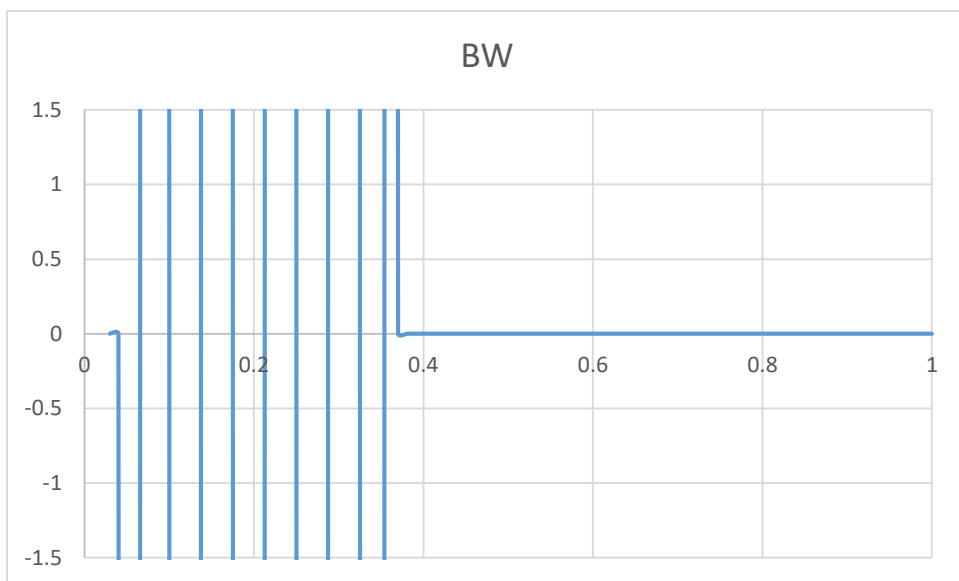
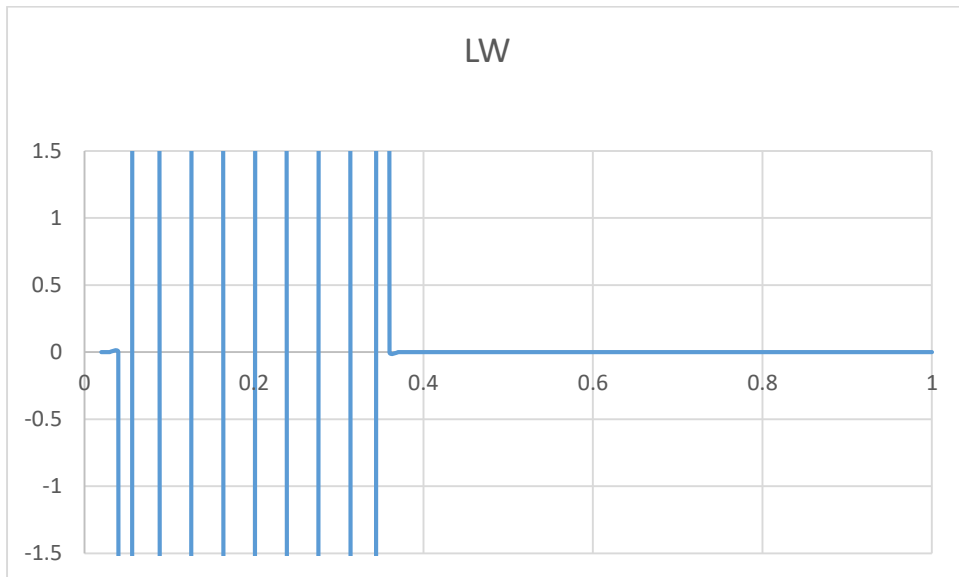
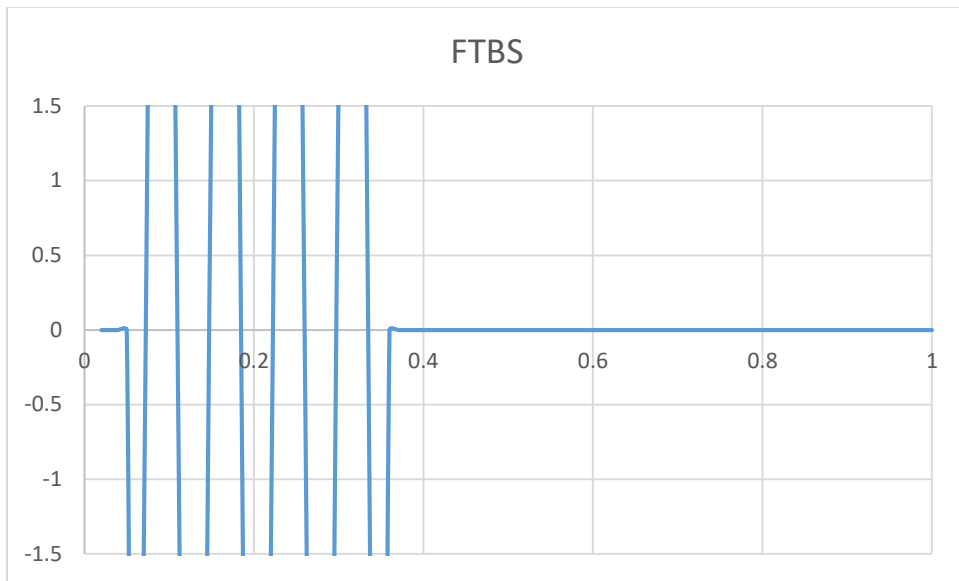


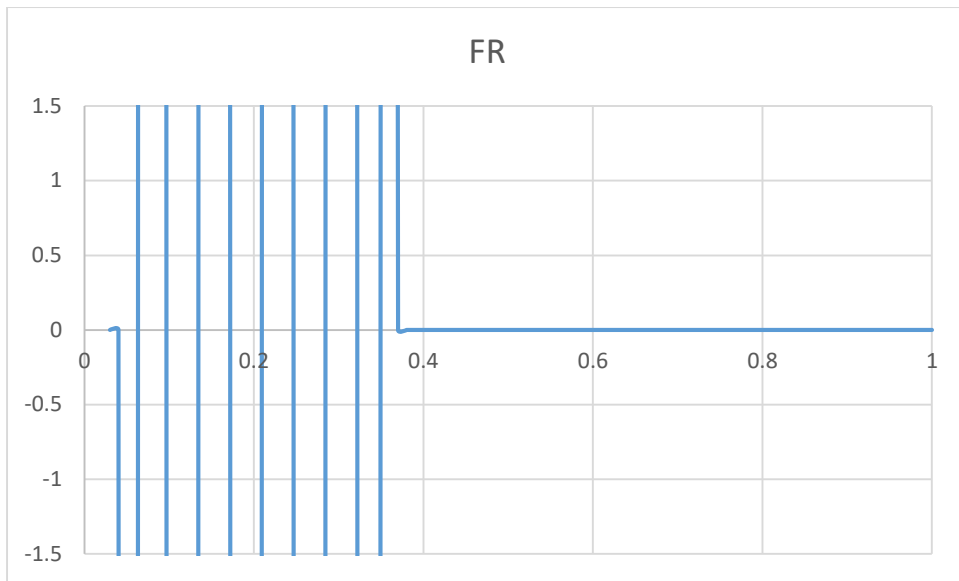




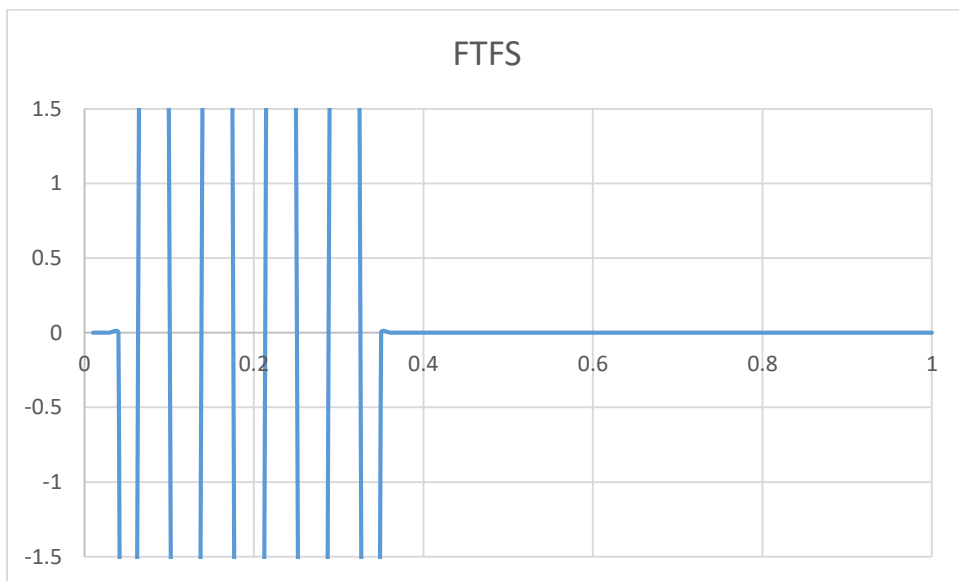
$Nu=1$

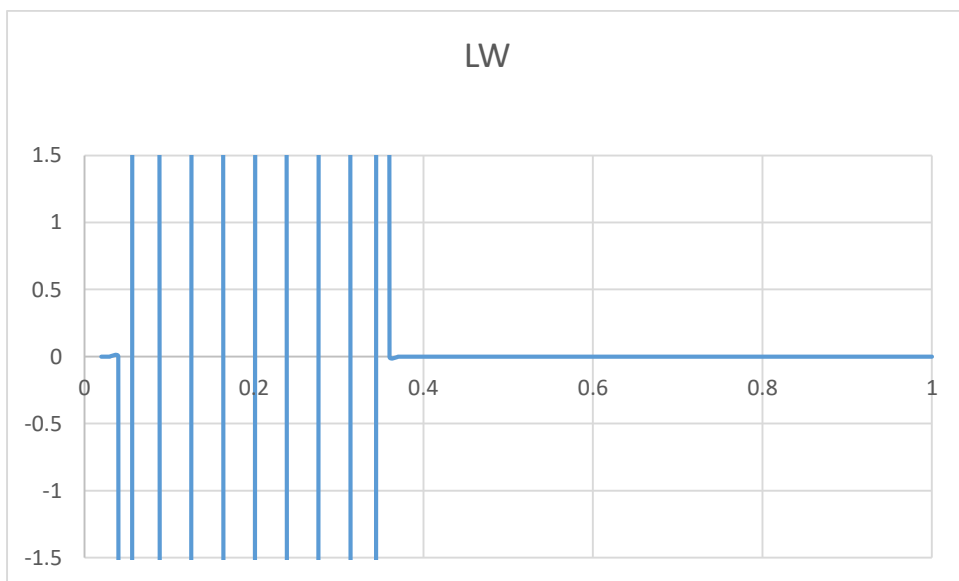
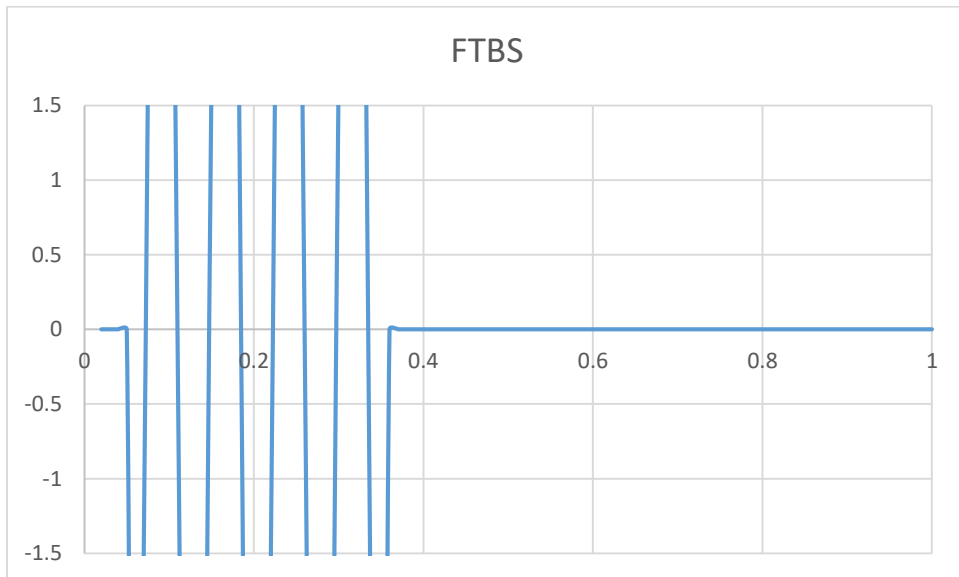
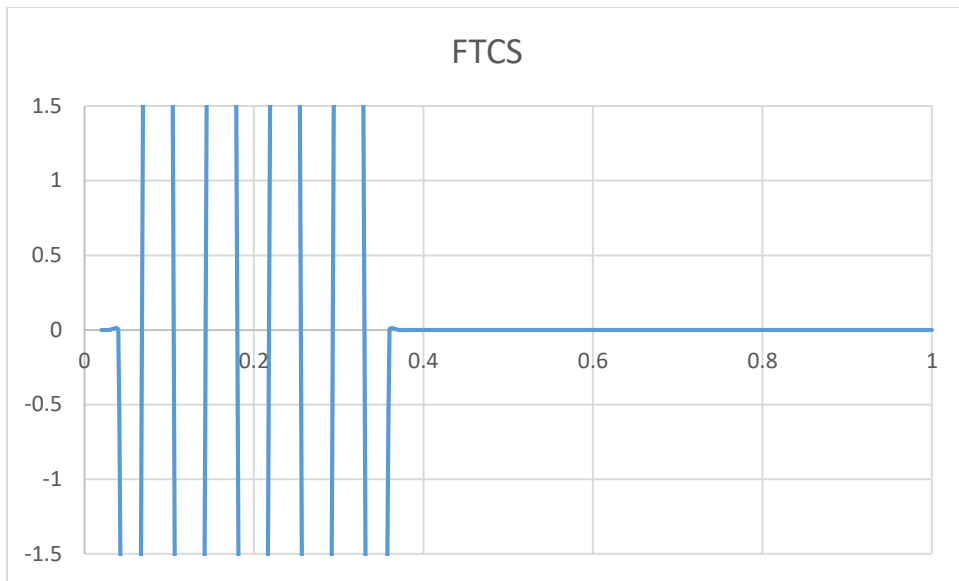


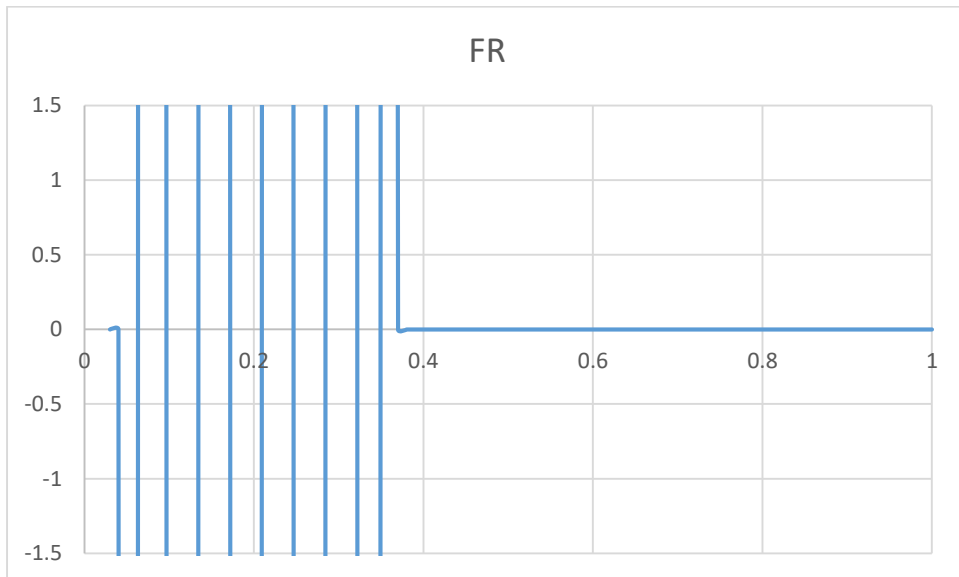
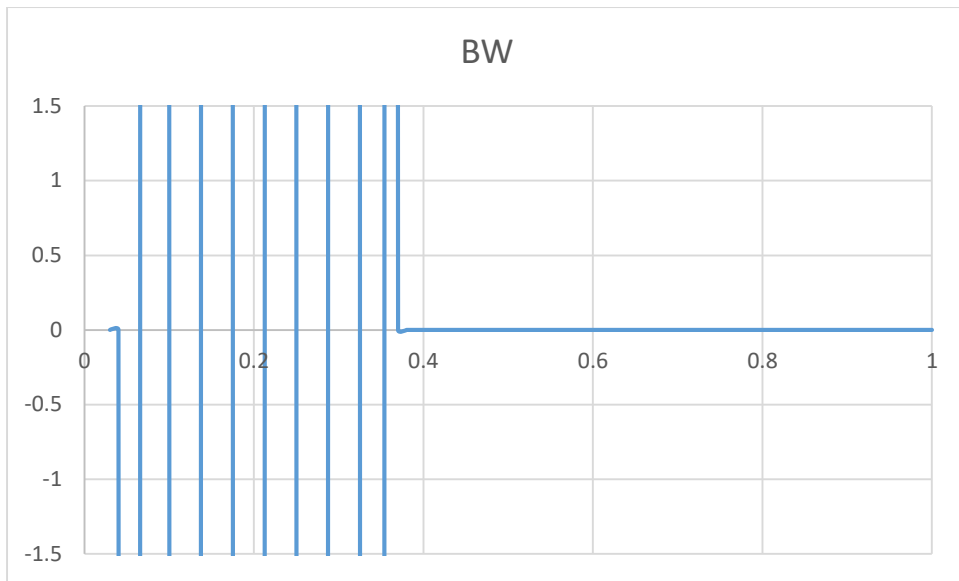




$Nu=1.5$

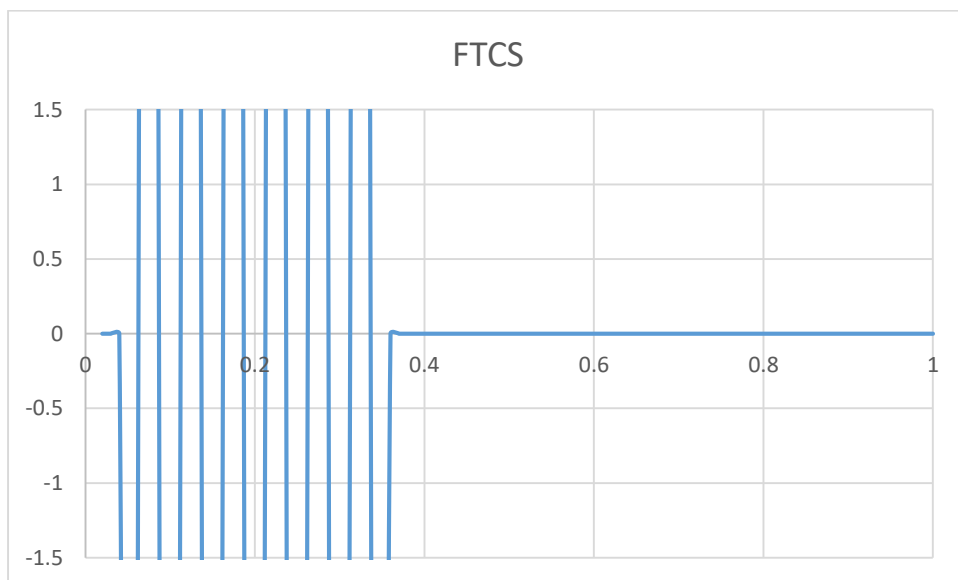
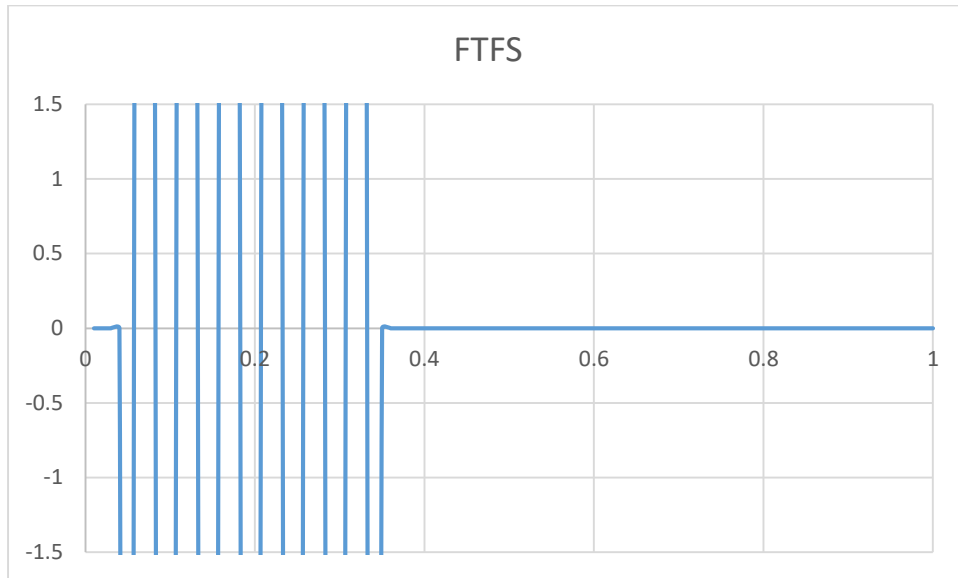


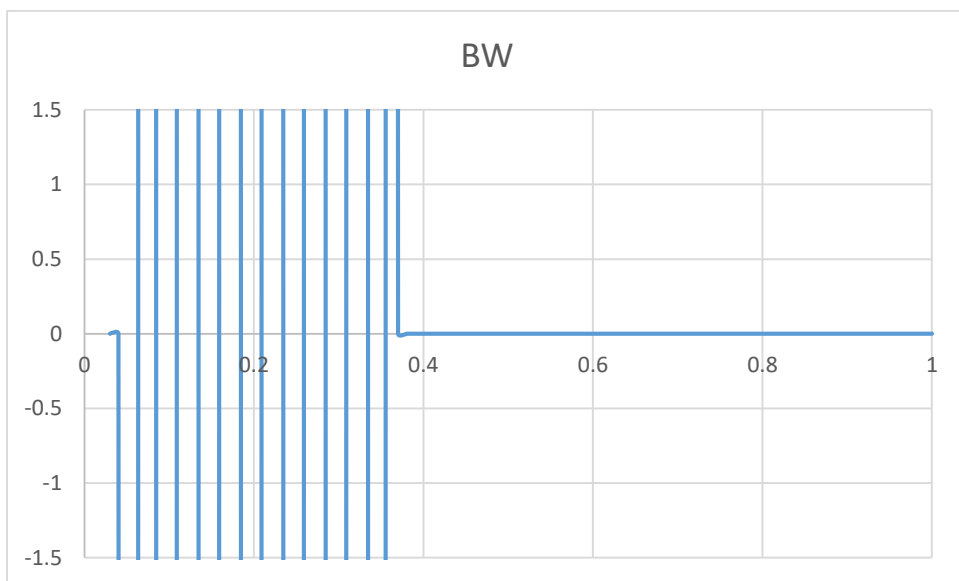
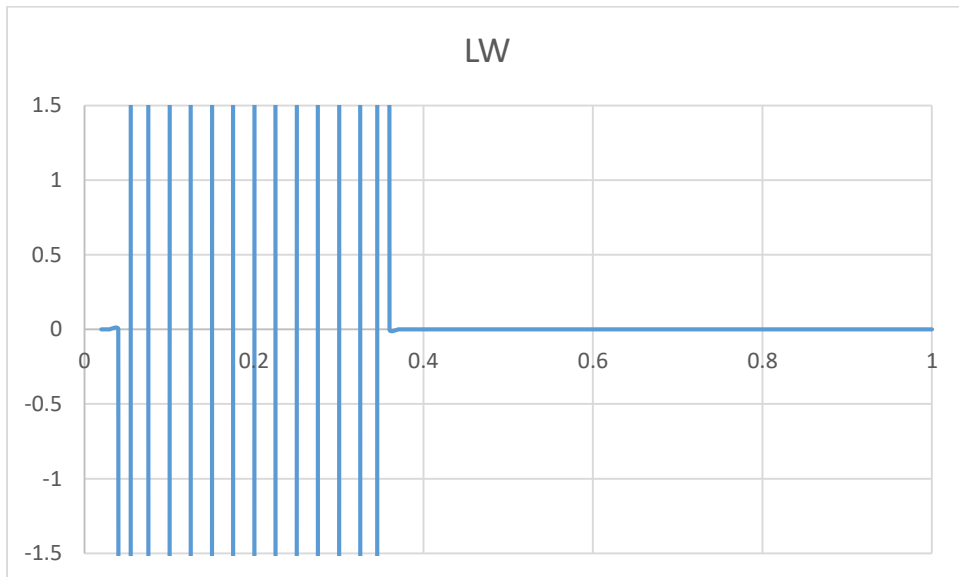
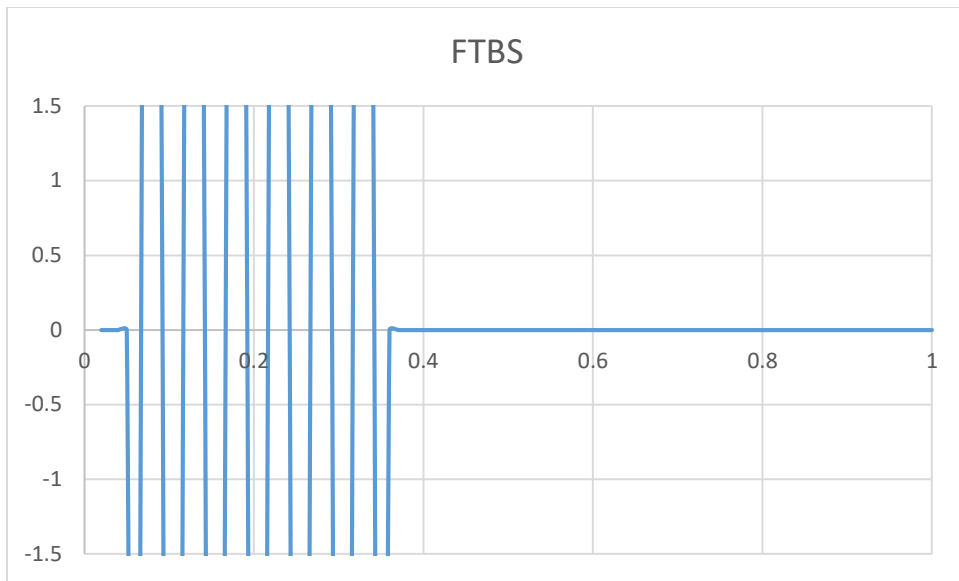


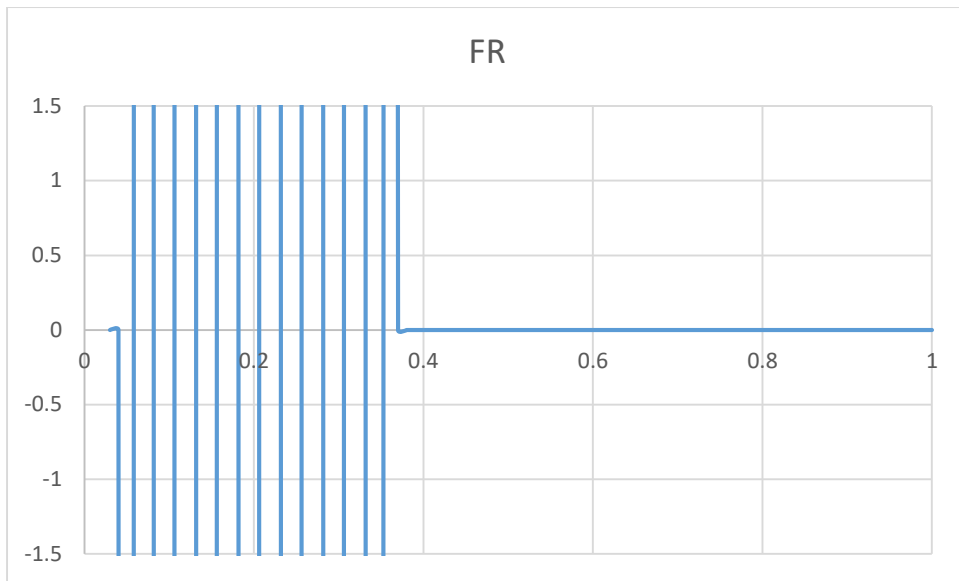


4th Initial Solution

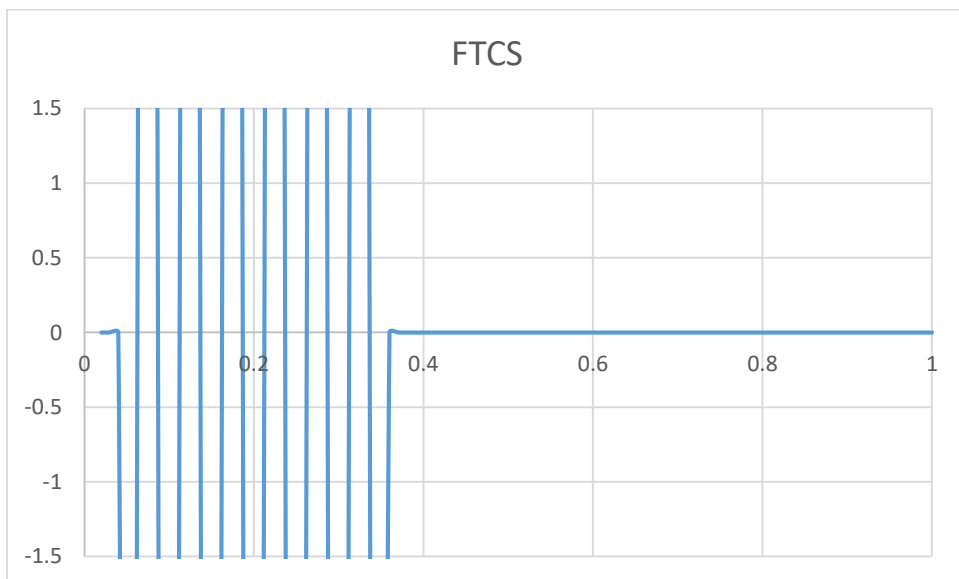
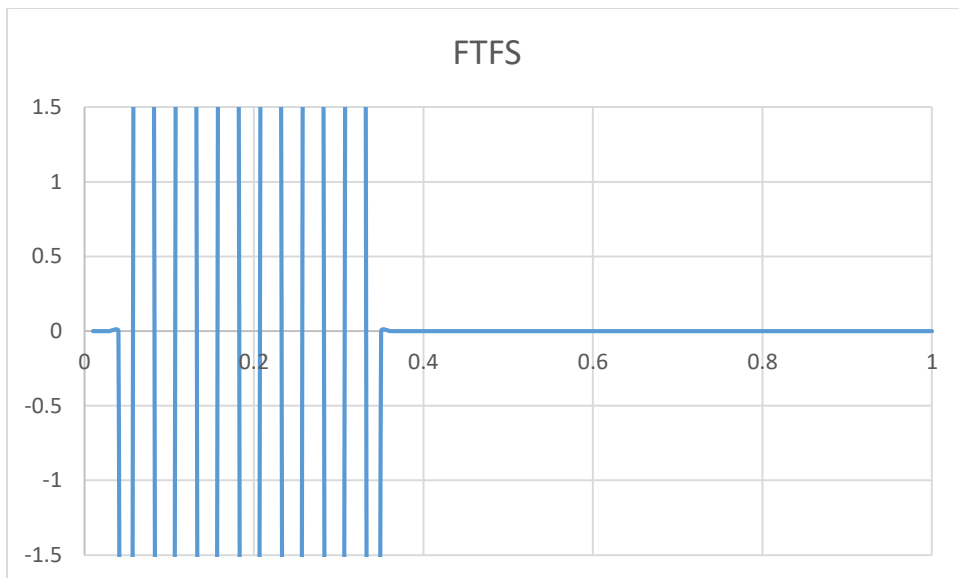
$Nu=0.5$

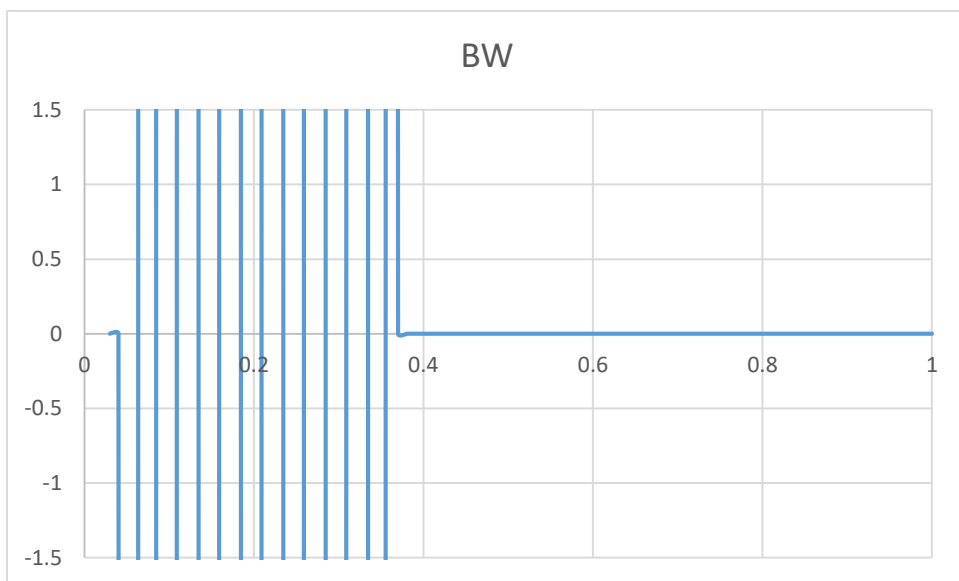
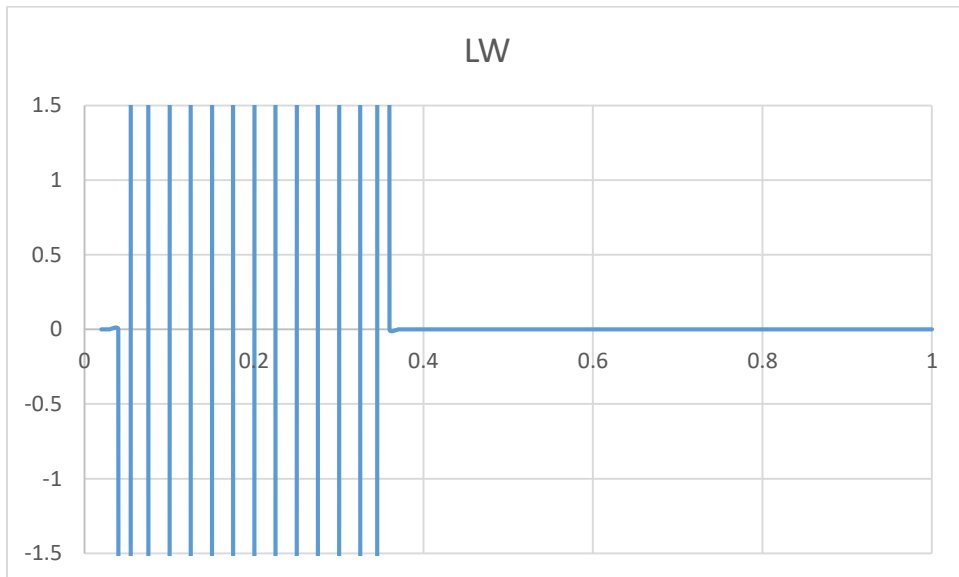
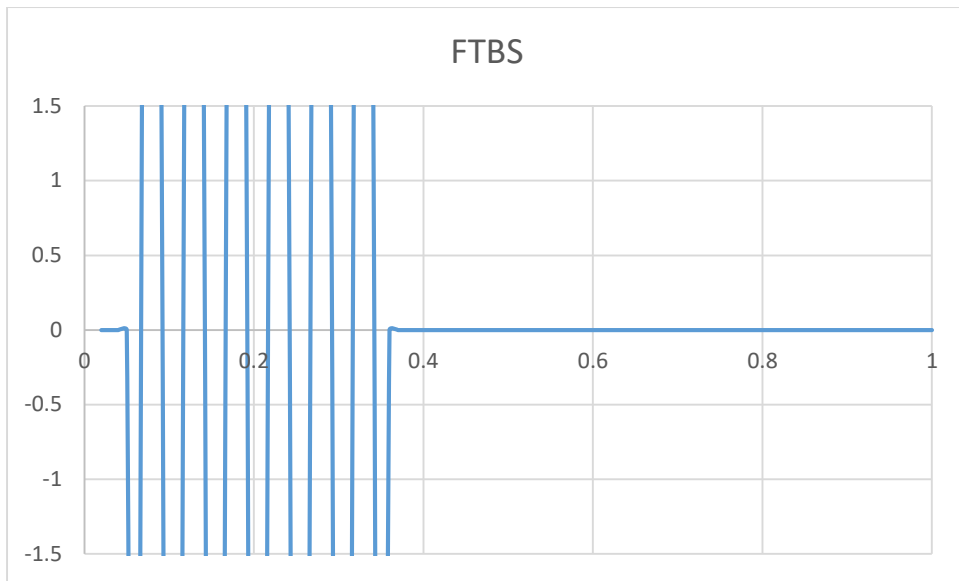


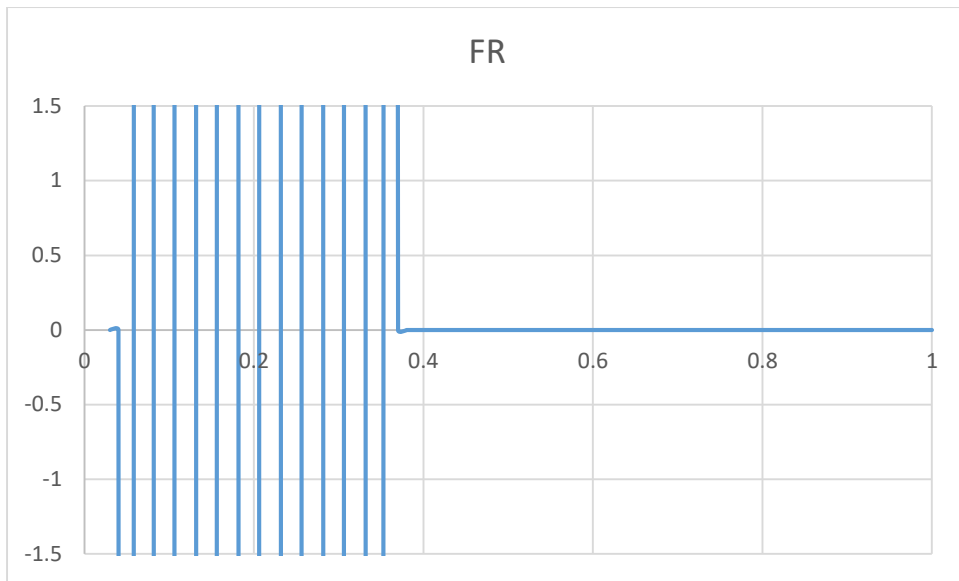




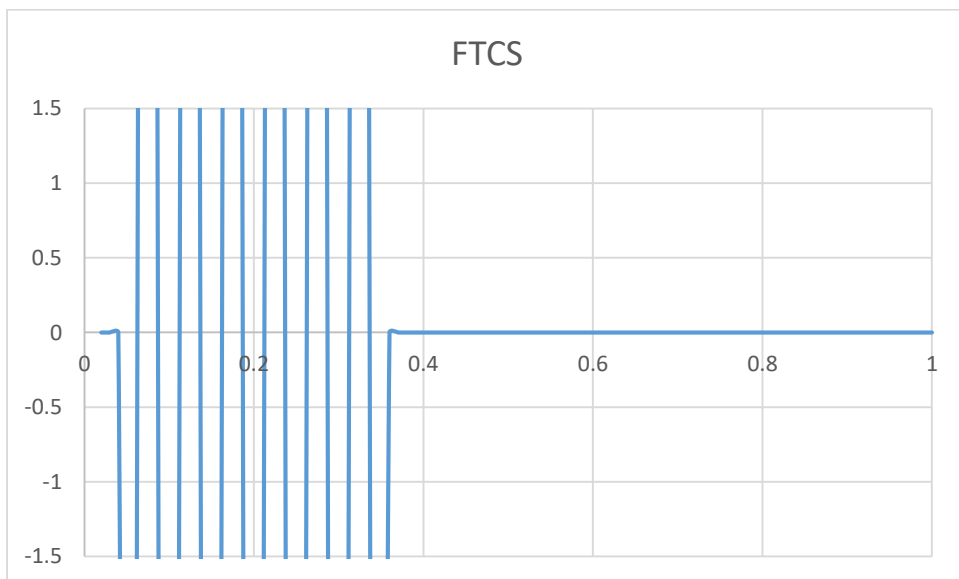
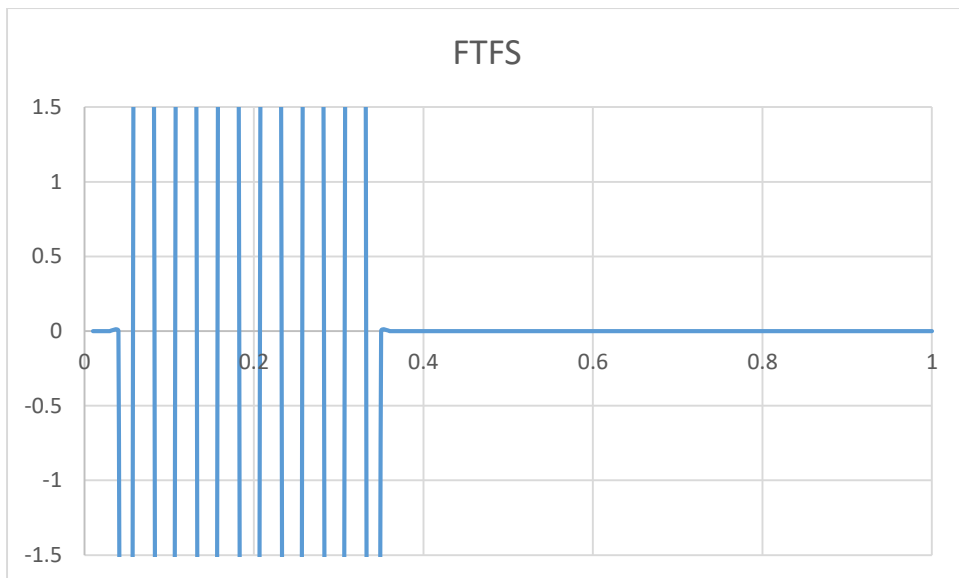
$Nu=1$

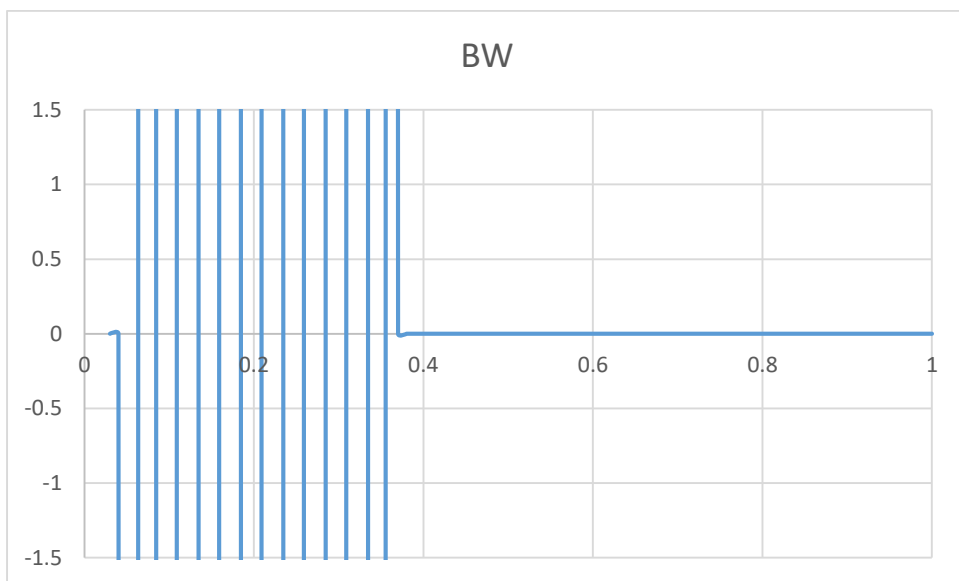
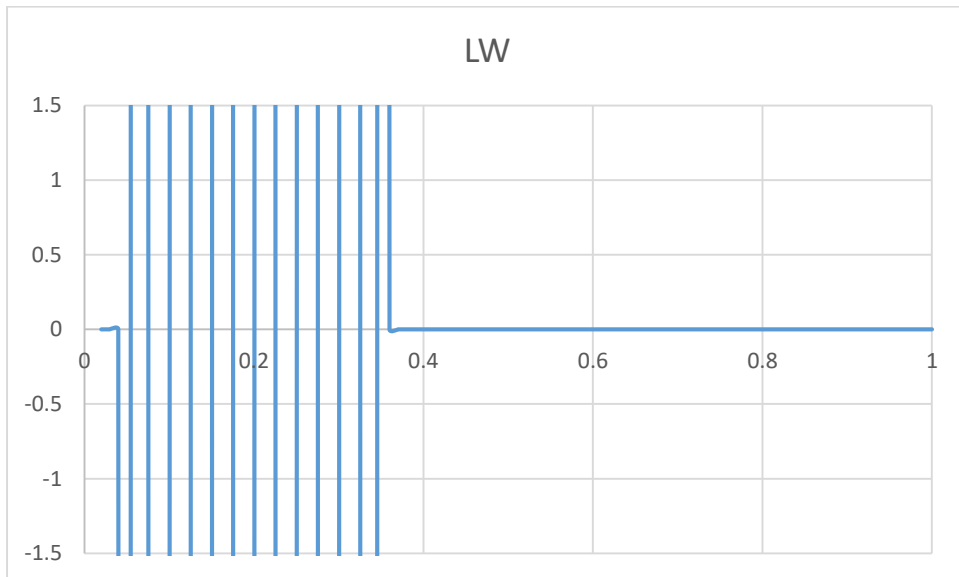
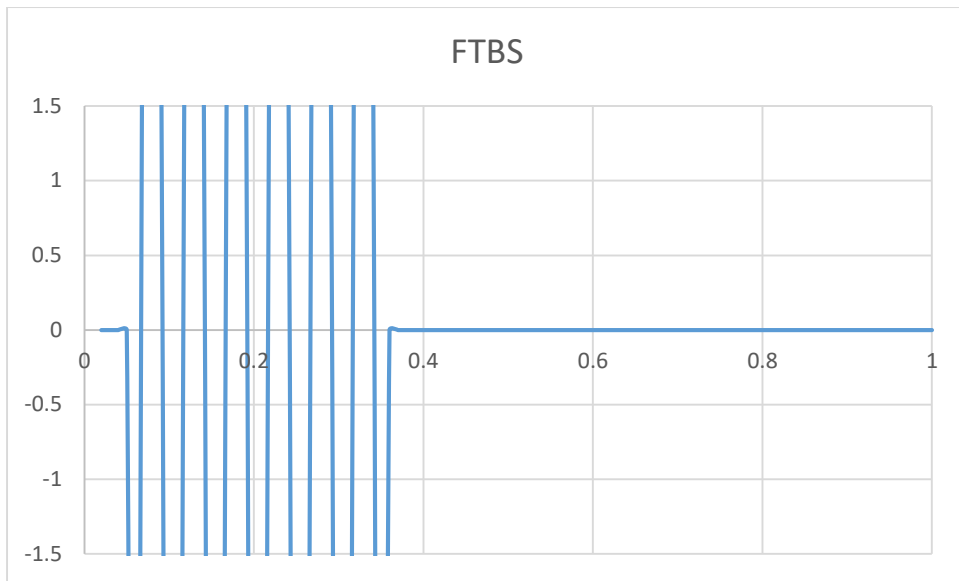


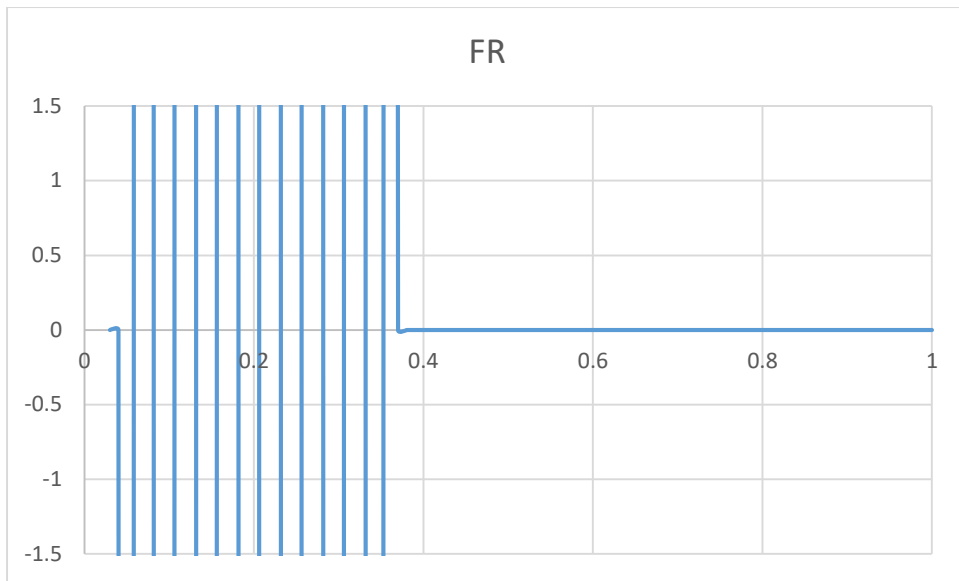




Nu=1.5

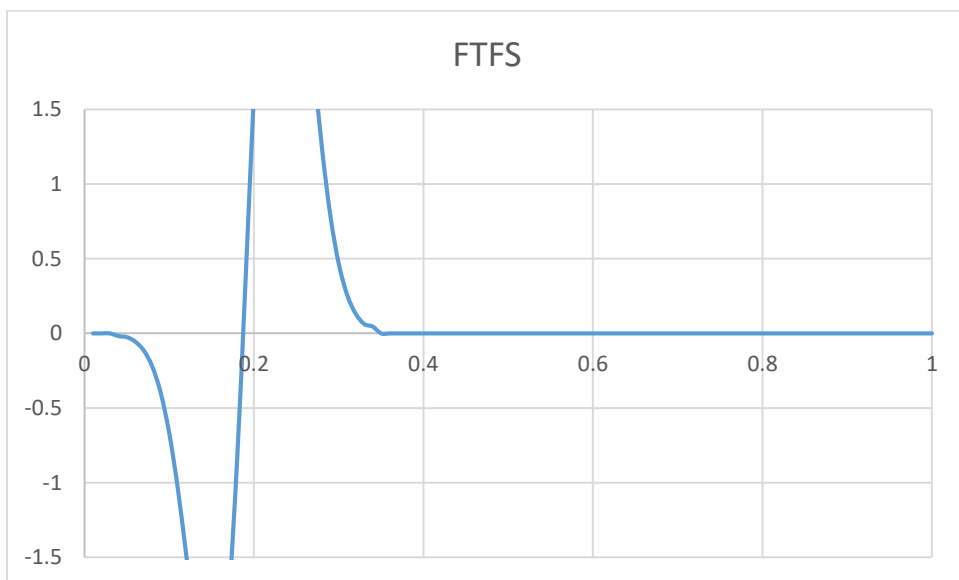


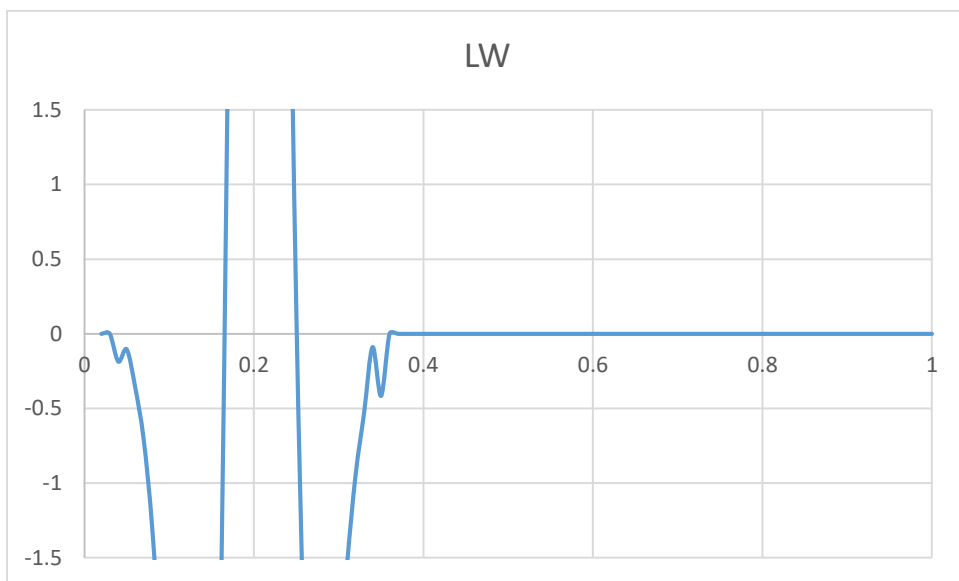
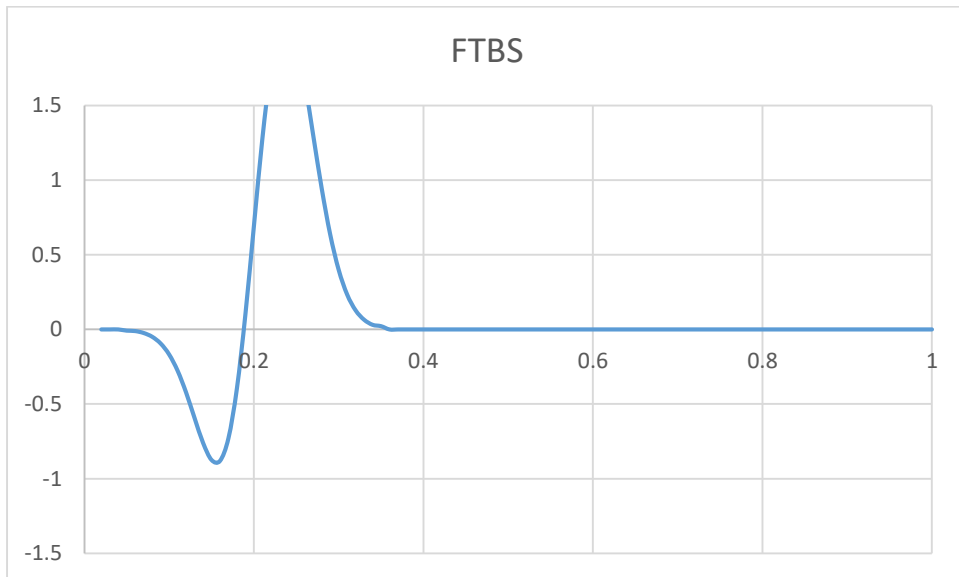
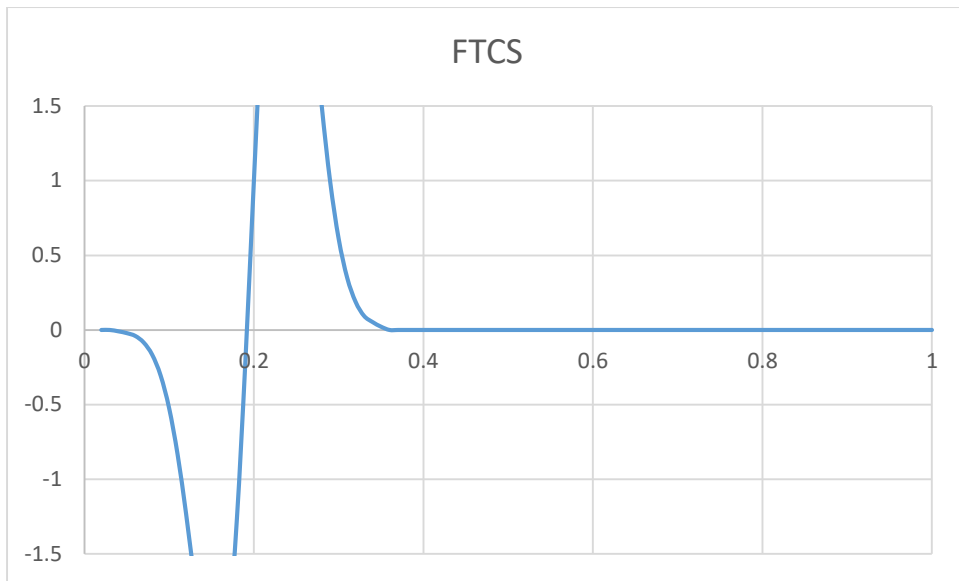


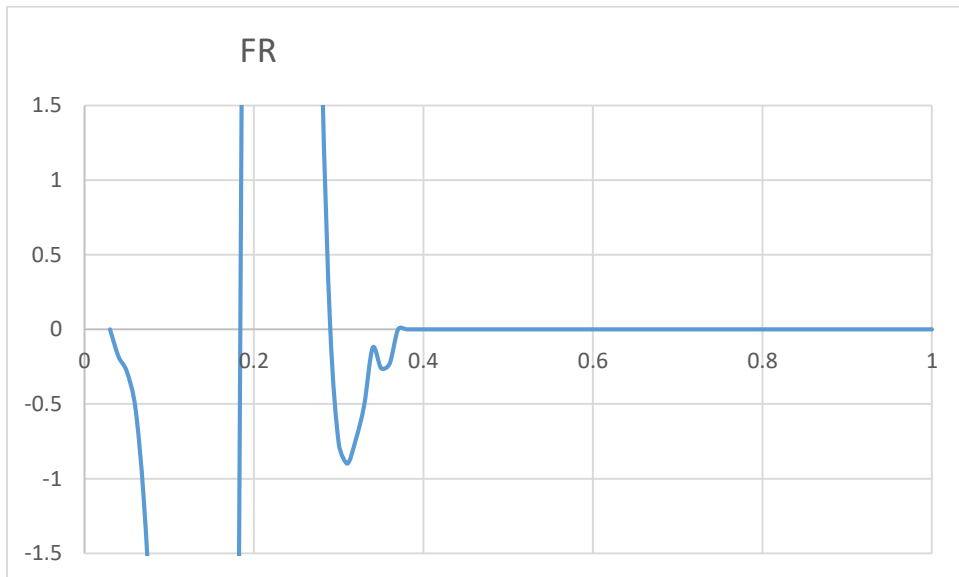
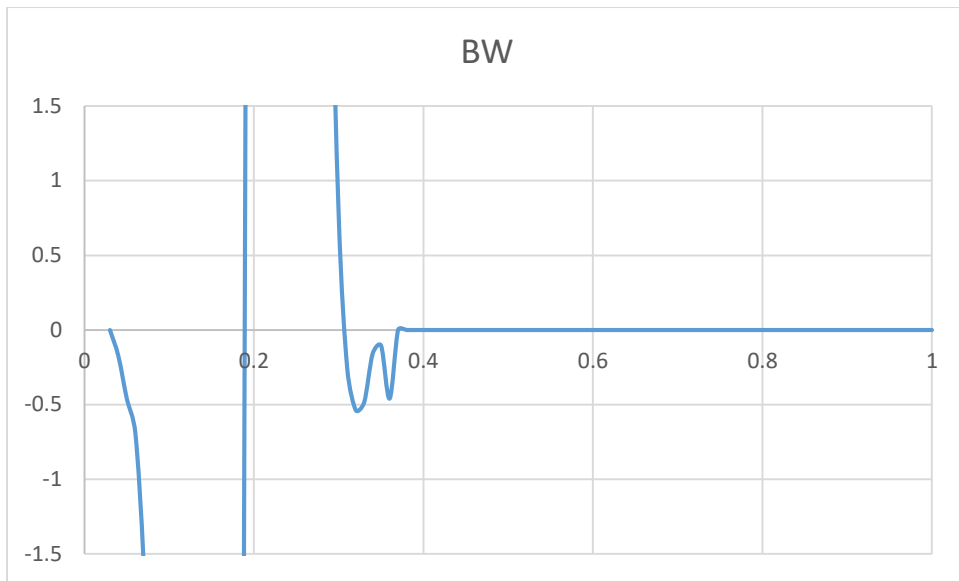


5th Initial Solution

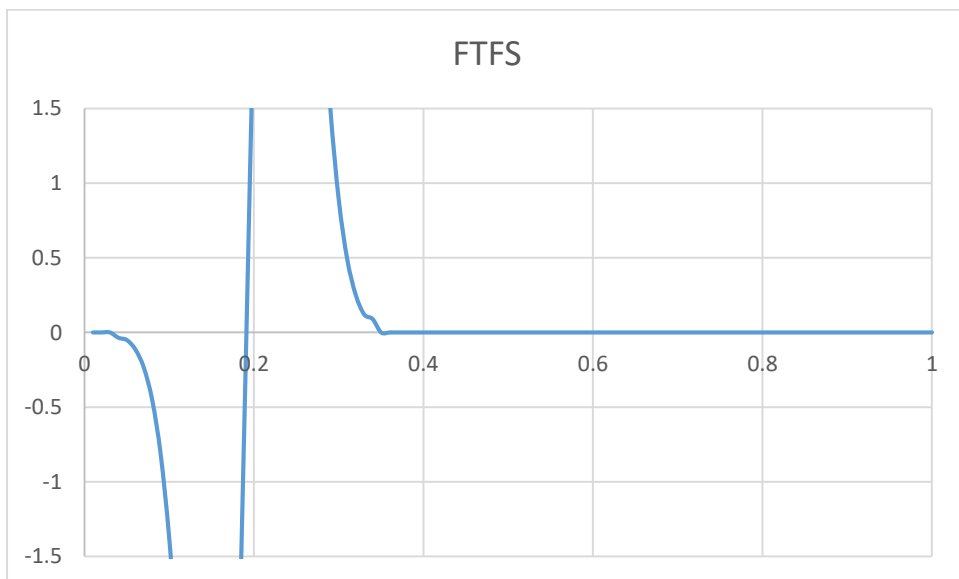
$Nu=0.5$

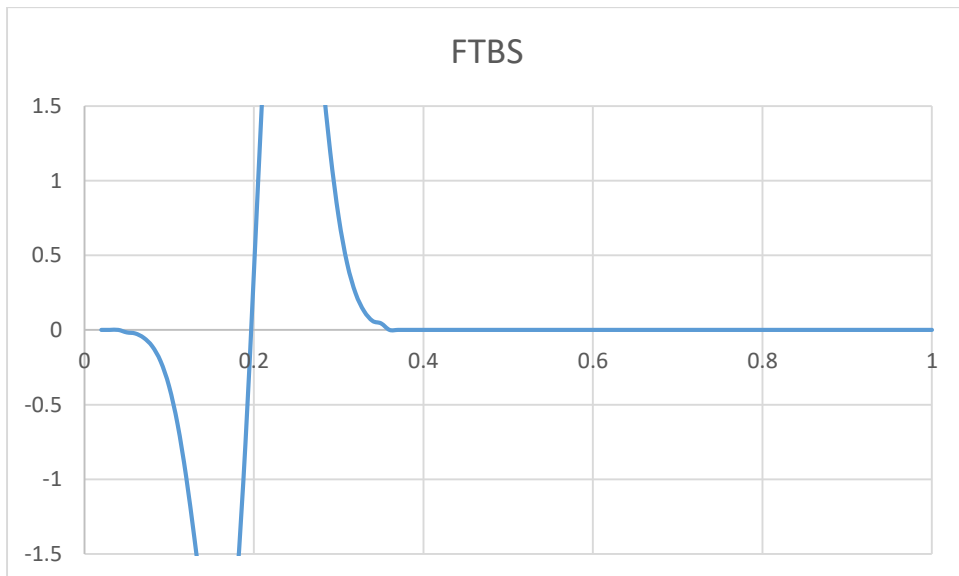
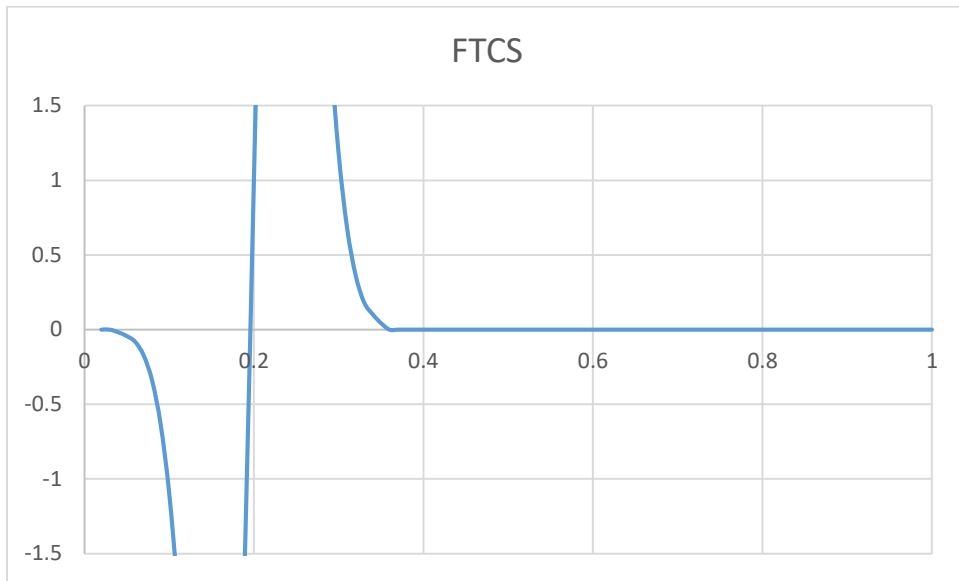


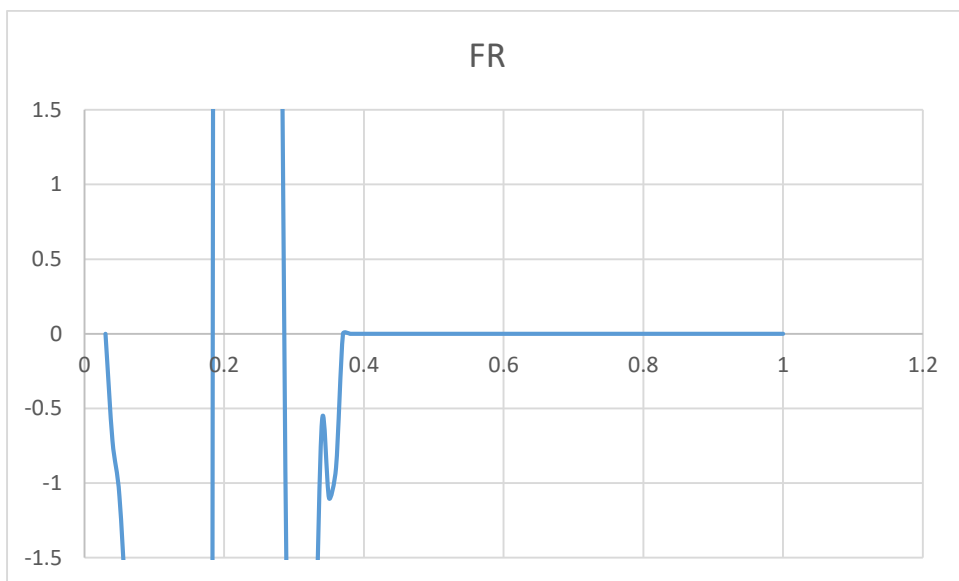
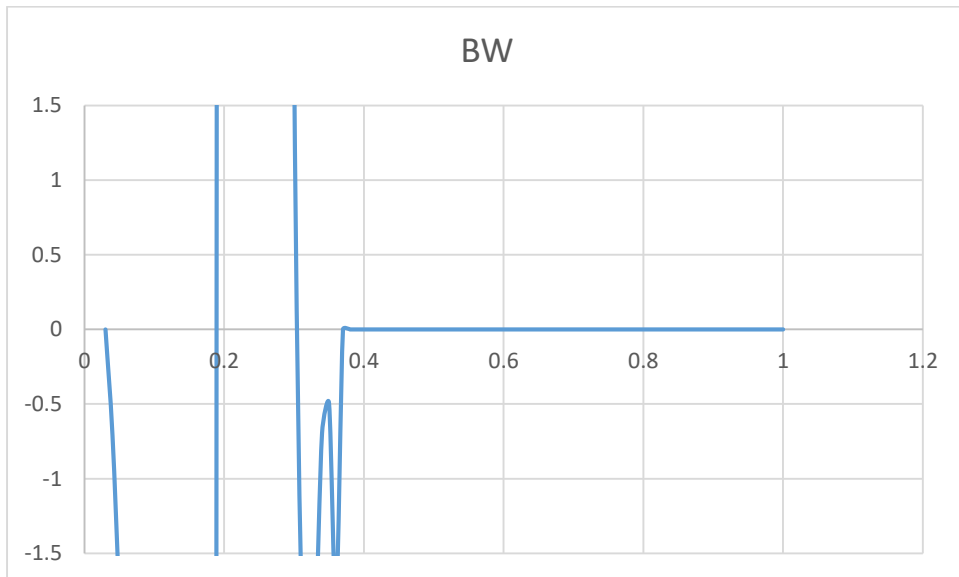
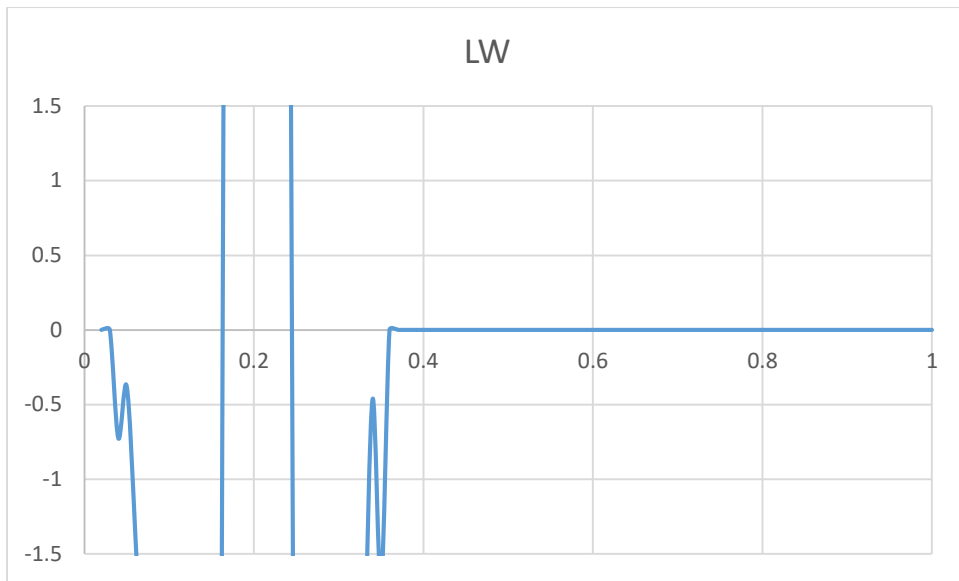




Nu=1







$Nu=1.5$

