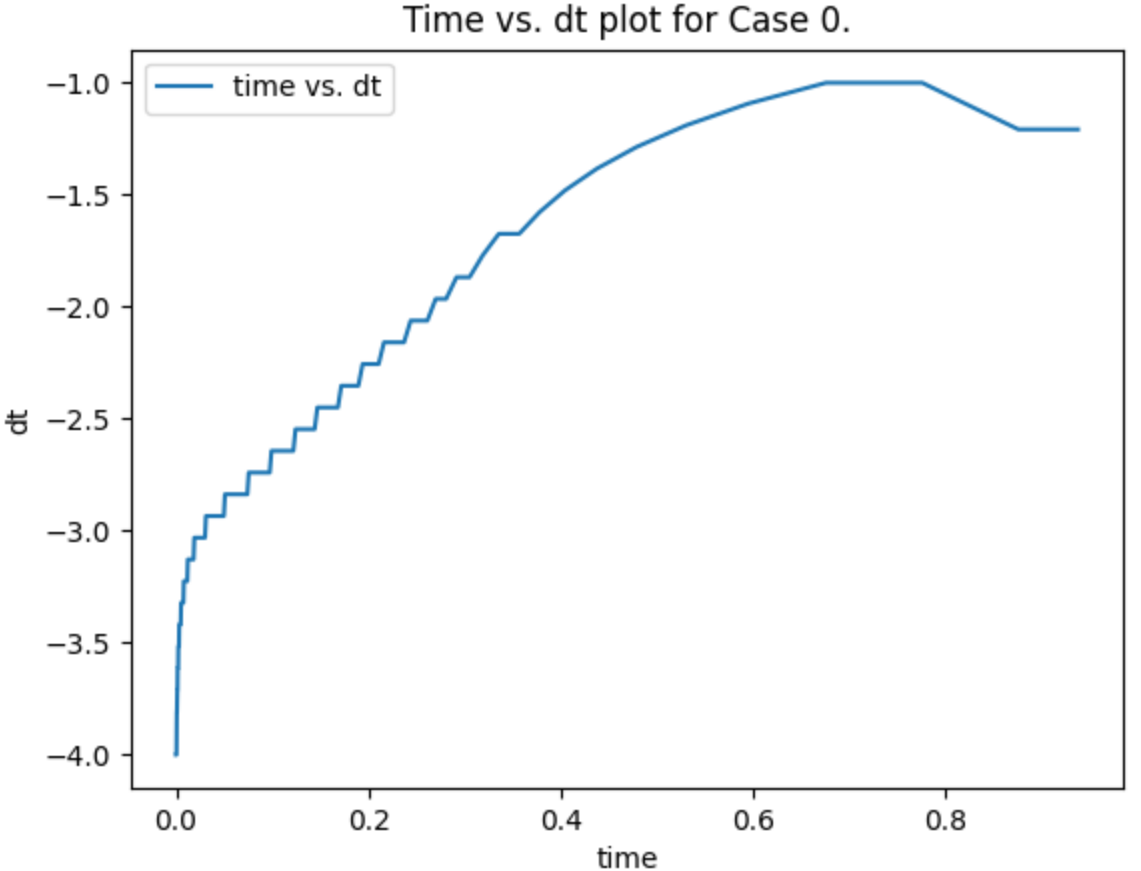
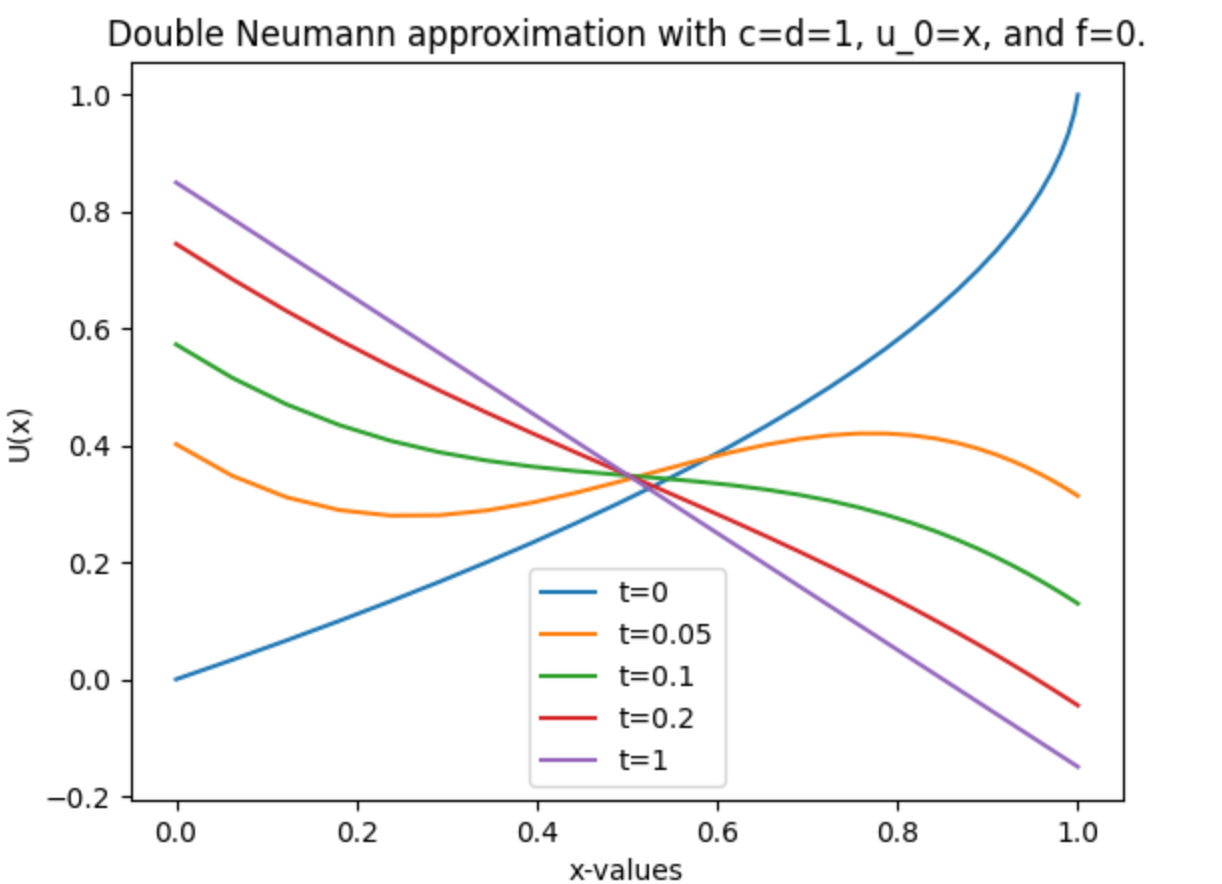
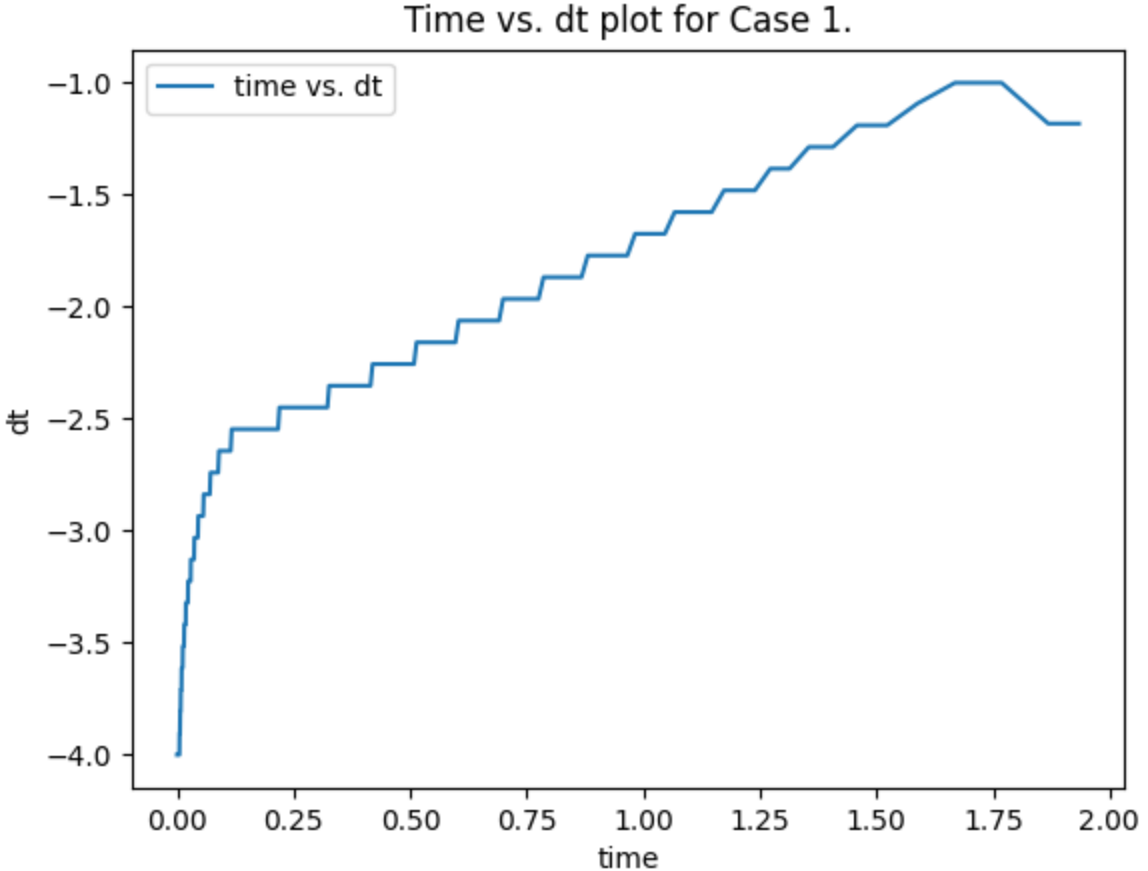
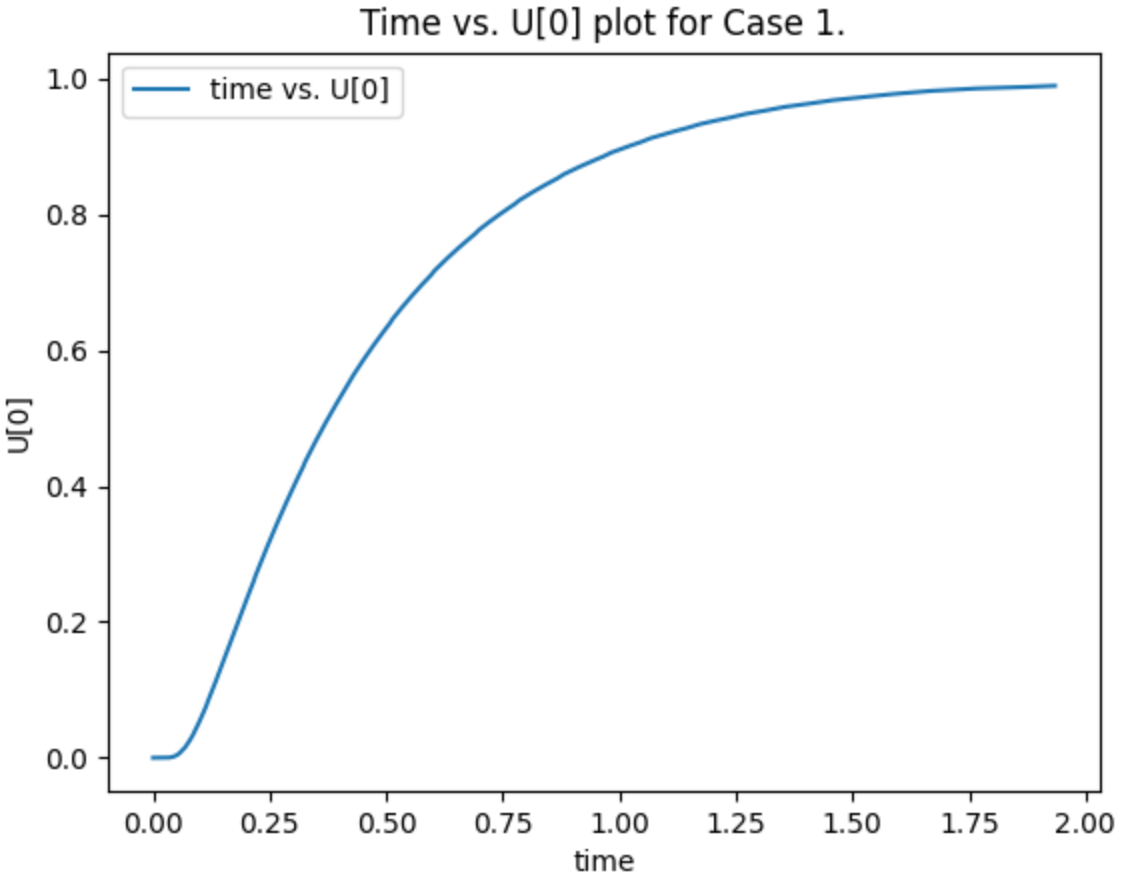
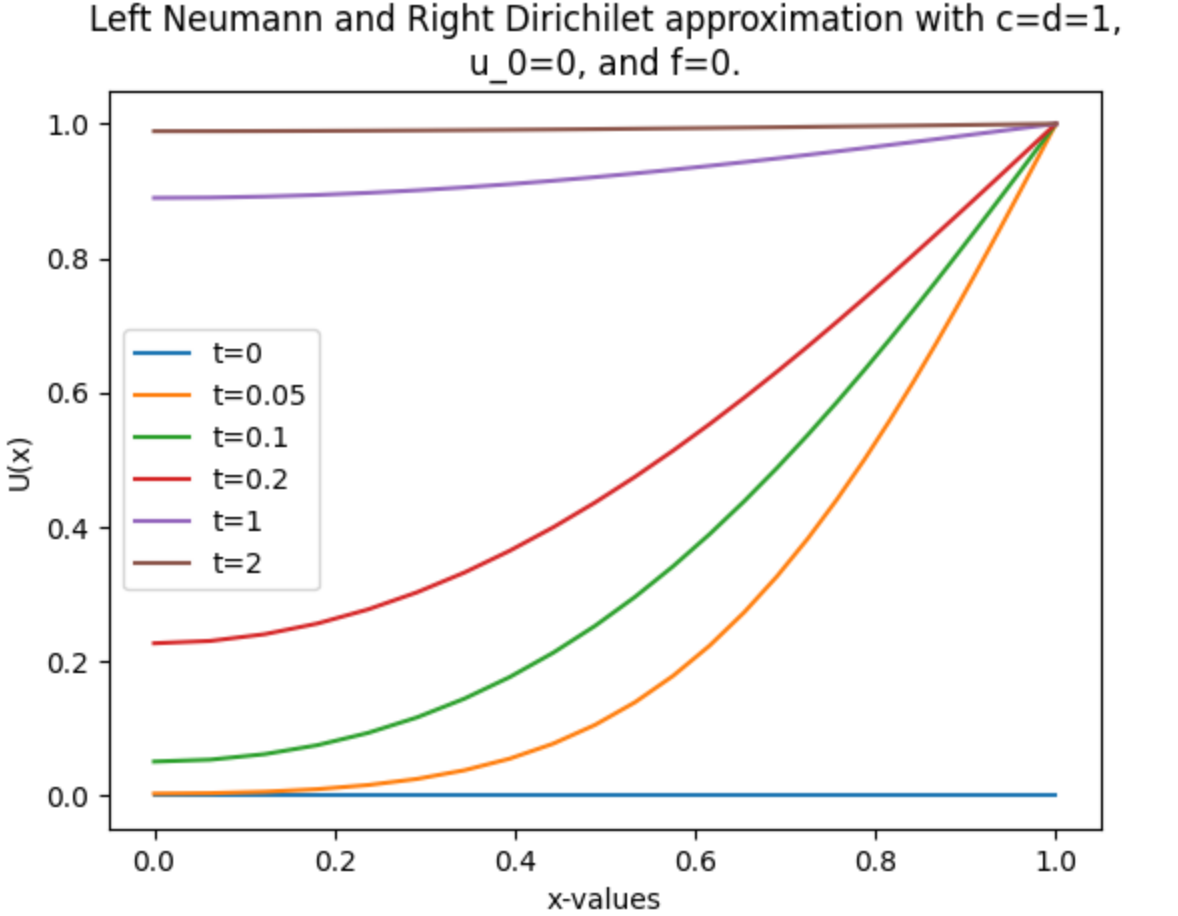
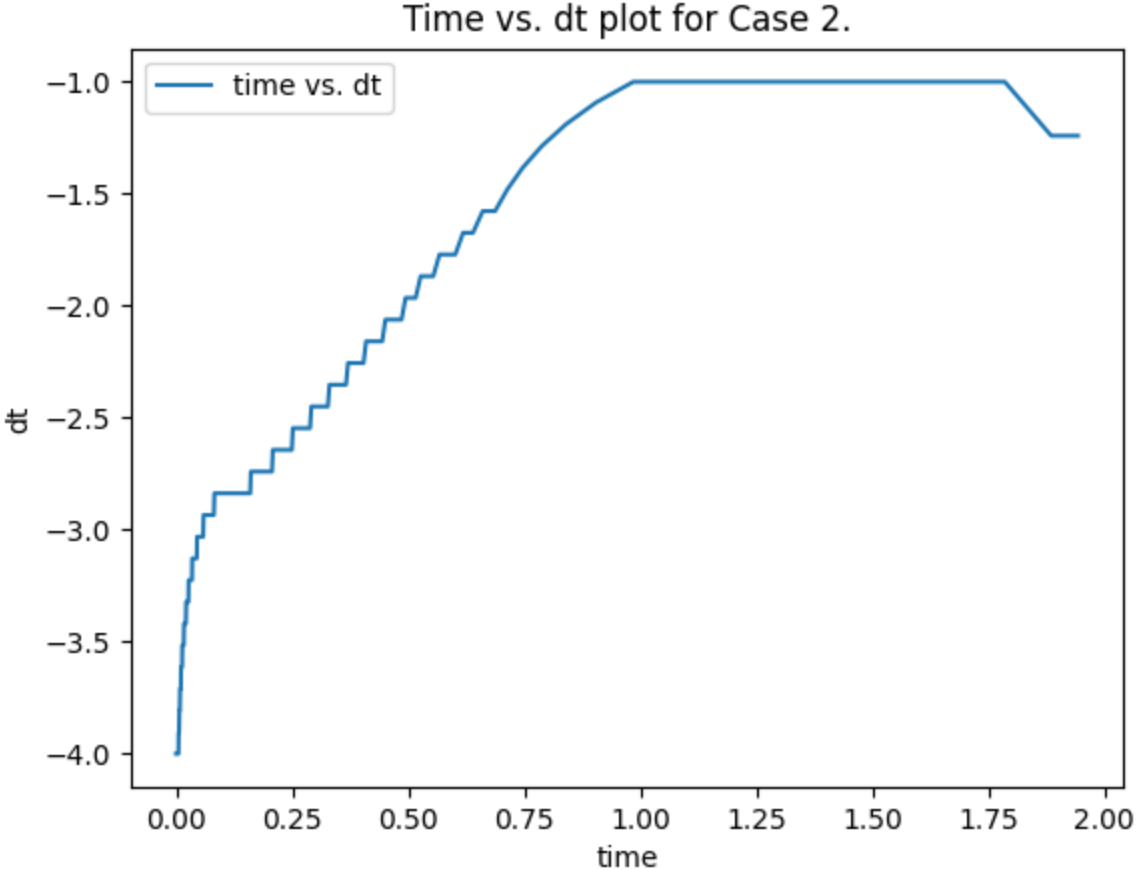

Time vs. dt plot for Case 0.
time vs. dt
−1.0
−1.5
−2.0
−2.5
−3.0
−3.5
−4.0
dt
0.0
0.2
0.4
0.6
0.8
time

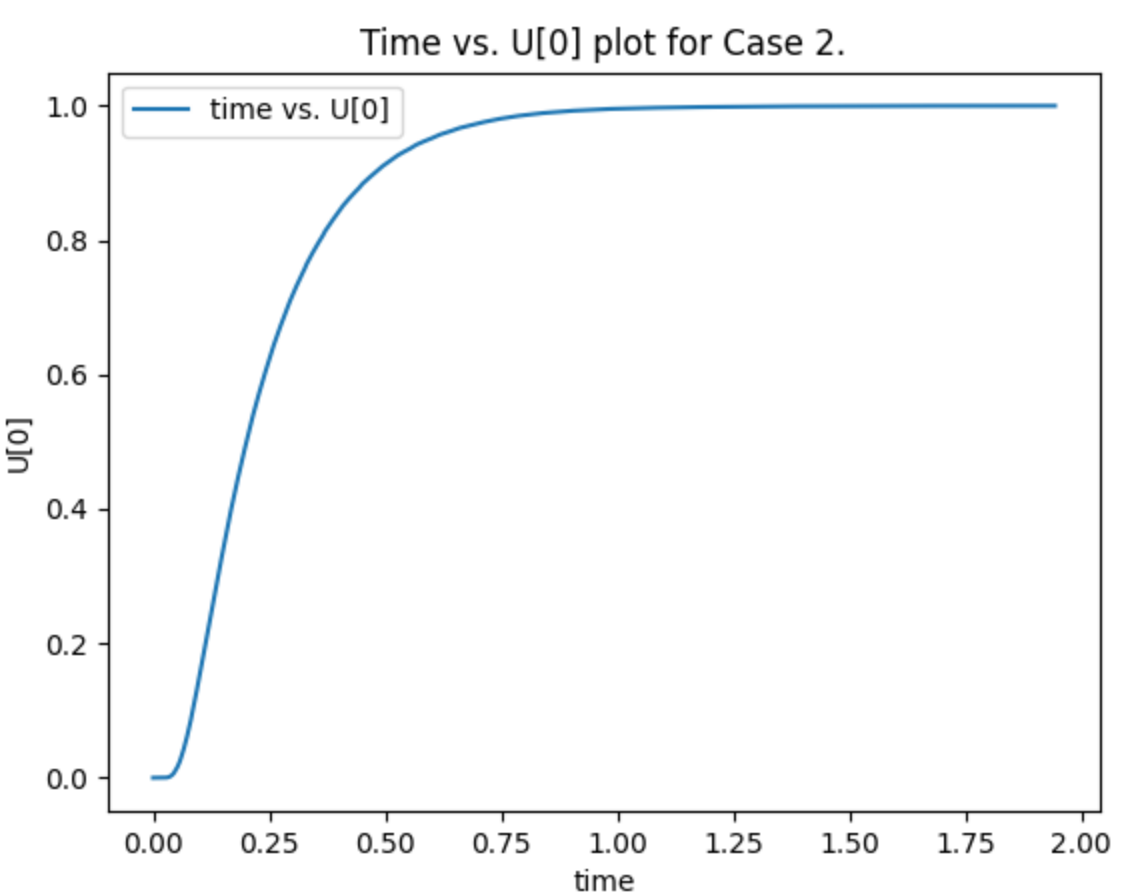

Double Neumann approximation with c=d=1, u_0=x, and f=0.
U(x)
x-values
1.0
0.8
0.6
0.4
0.2
0.0
−0.2
0.0
0.2
0.4
0.6
0.8
1.0
t=0
t=0.05
t=0.1
t=0.2
t=1

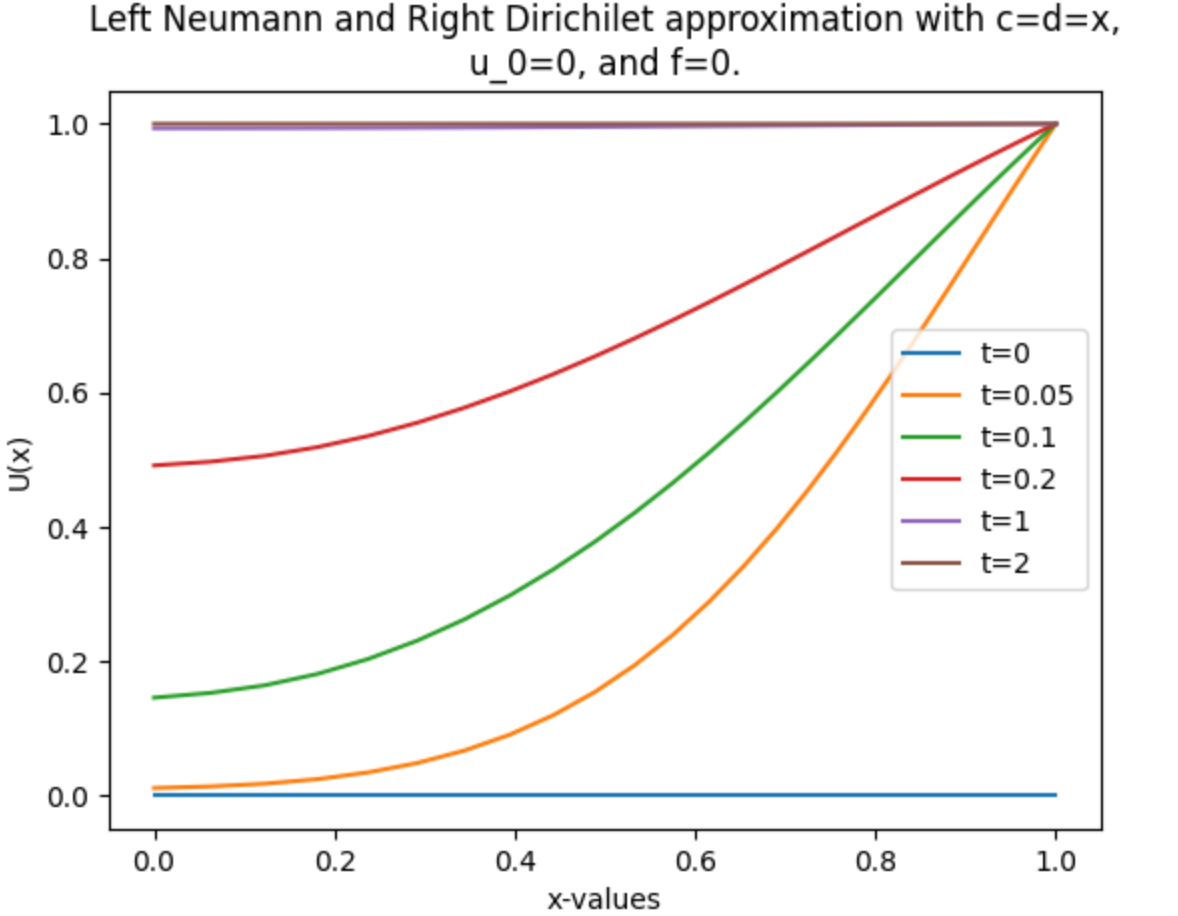

Time vs. dt plot for Case 1.
time vs. dt
−1.0
−1.5
−2.0
−2.5
−3.0
−3.5
−4.0
dt
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
time

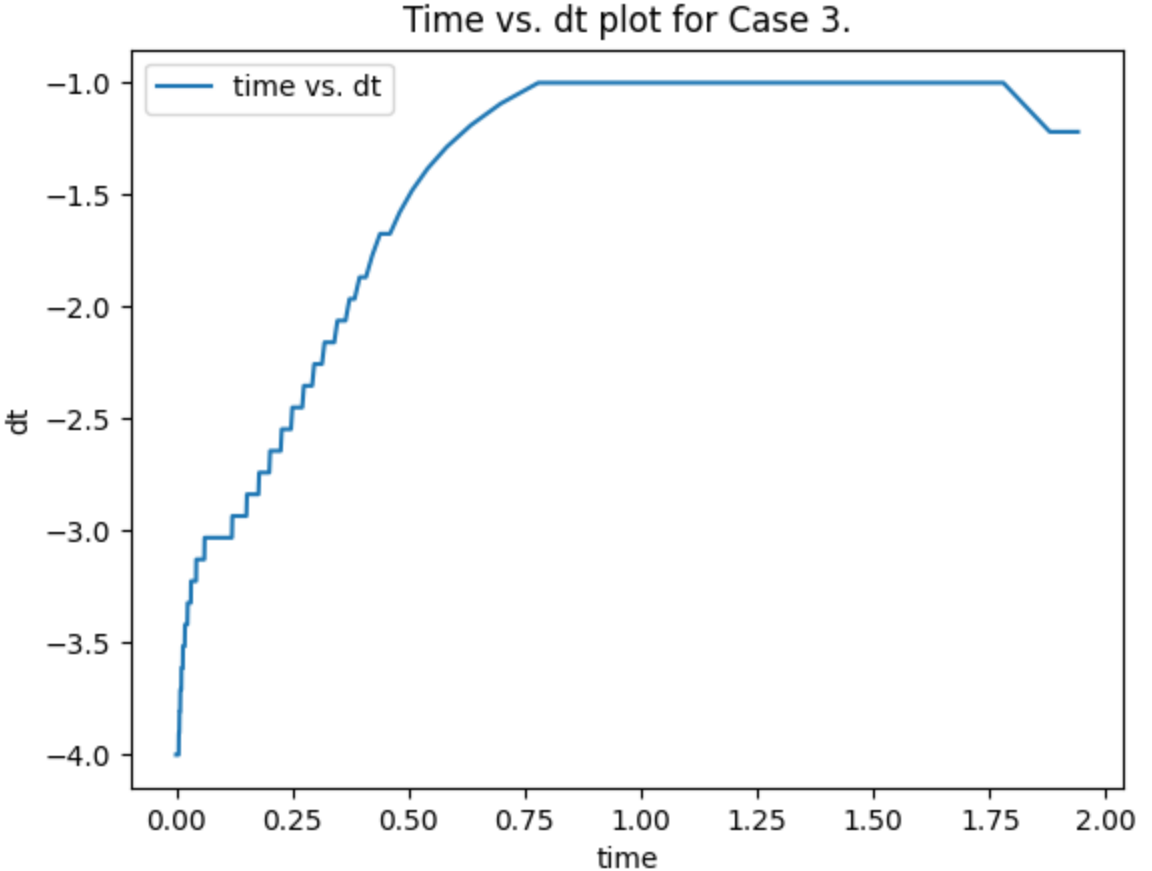

Time vs. U[0] plot for Case 1.
time vs. U[0]
U[0]
time
0.0
0.2
0.4
0.6
0.8
1.0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00

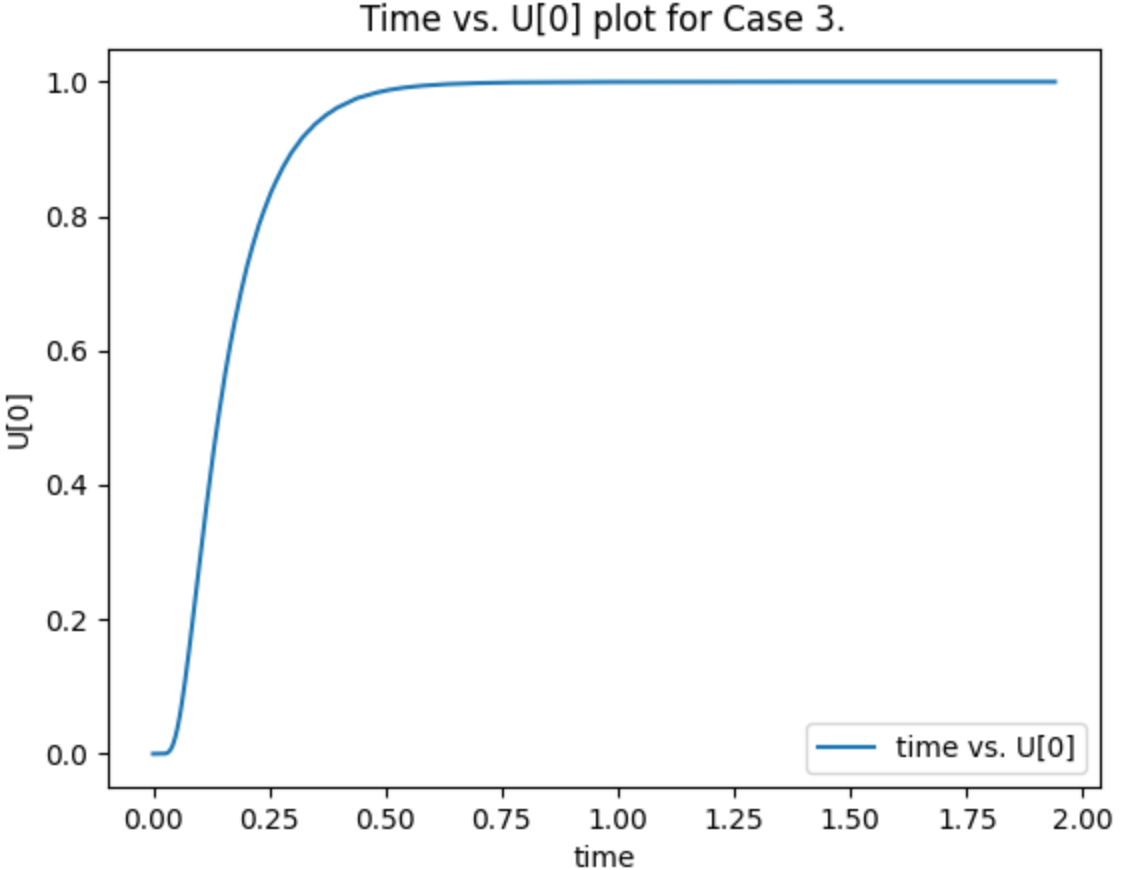

Left Neumann and Right Dirichilet approximation with c=d=1,
u_0=0, and f=0.
1.0
0.8
0.6
0.4
0.2
0.0
U(x)
t=0
t=0.05
t=0.1
t=0.2
t=1
t=2
0.0
0.2
0.4
0.6
0.8
1.0
x-values

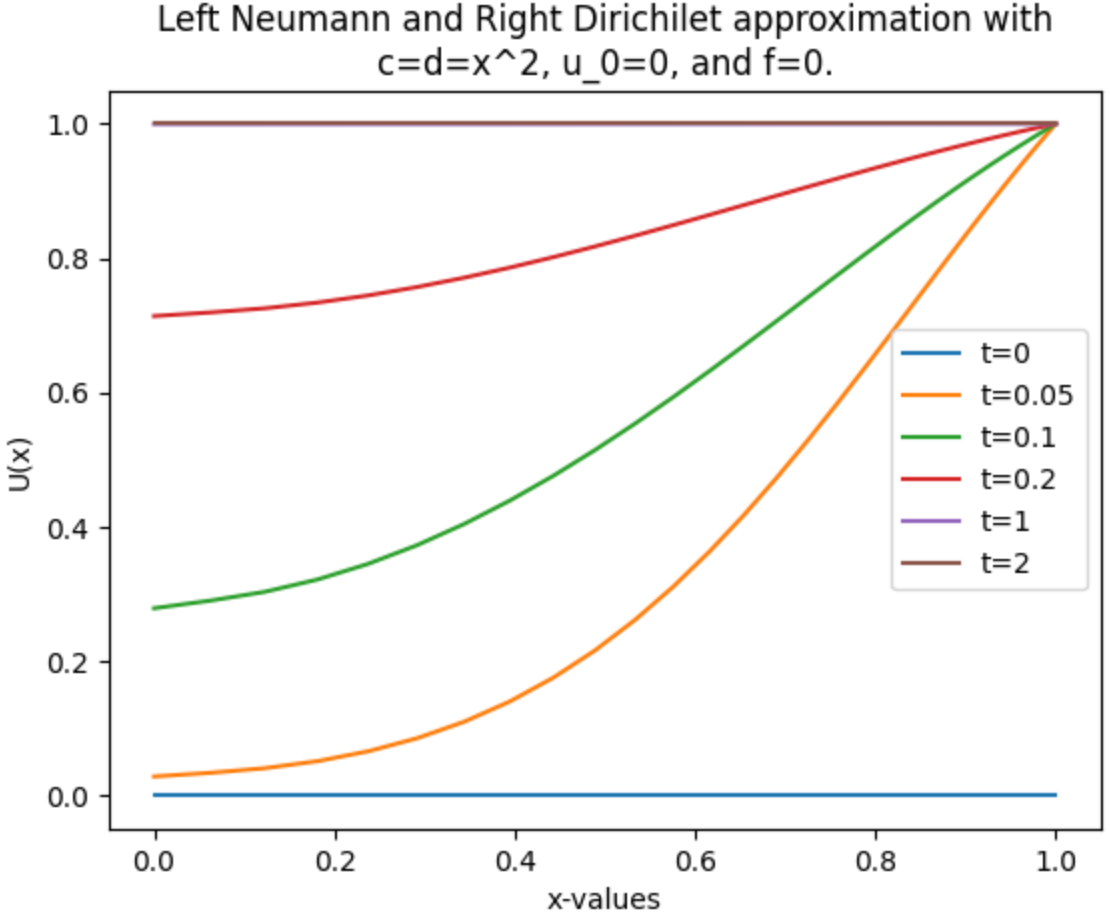

Time vs. dt plot for Case 2.
time vs. dt
−1.0
−1.5
−2.0
−2.5
−3.0
−3.5
−4.0
dt
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
time

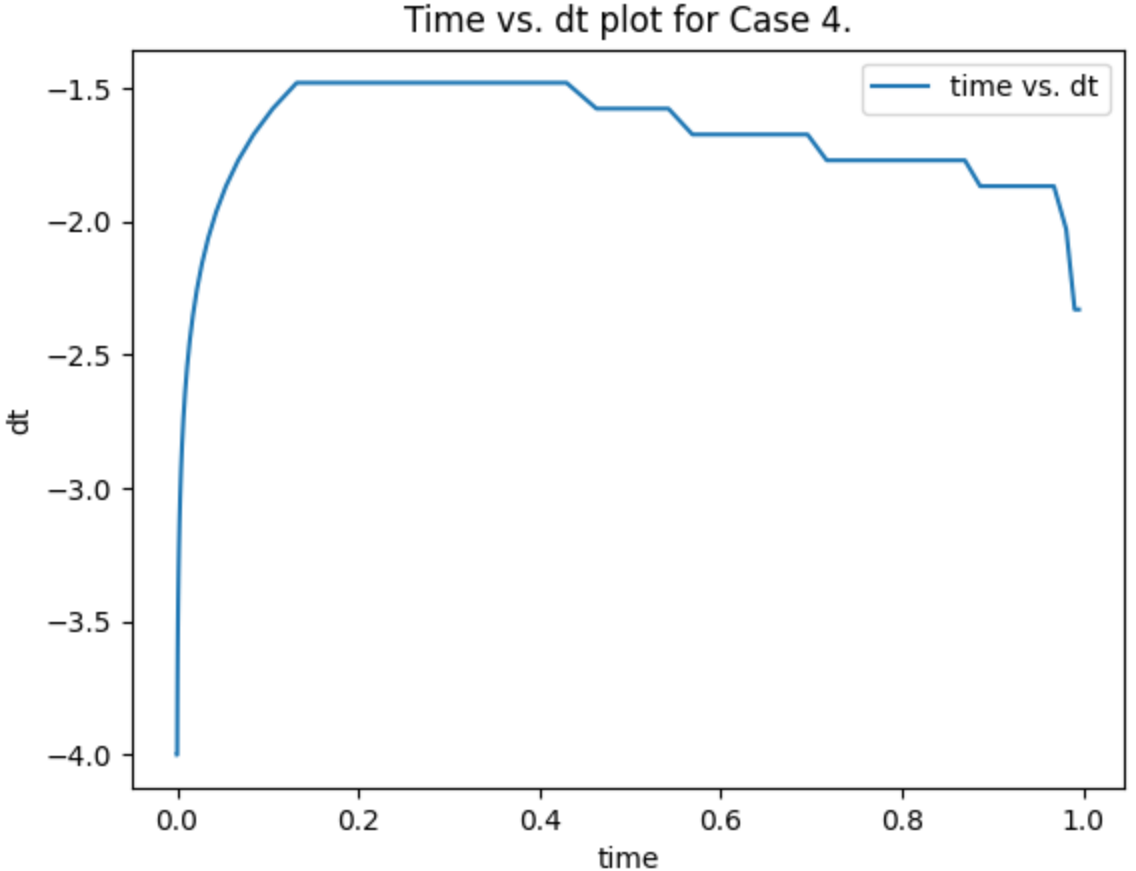

Time vs. U[0] plot for Case 2.
time vs. U[0]
1.0
0.8
0.6
0.4
0.2
0.0
U[0]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
time

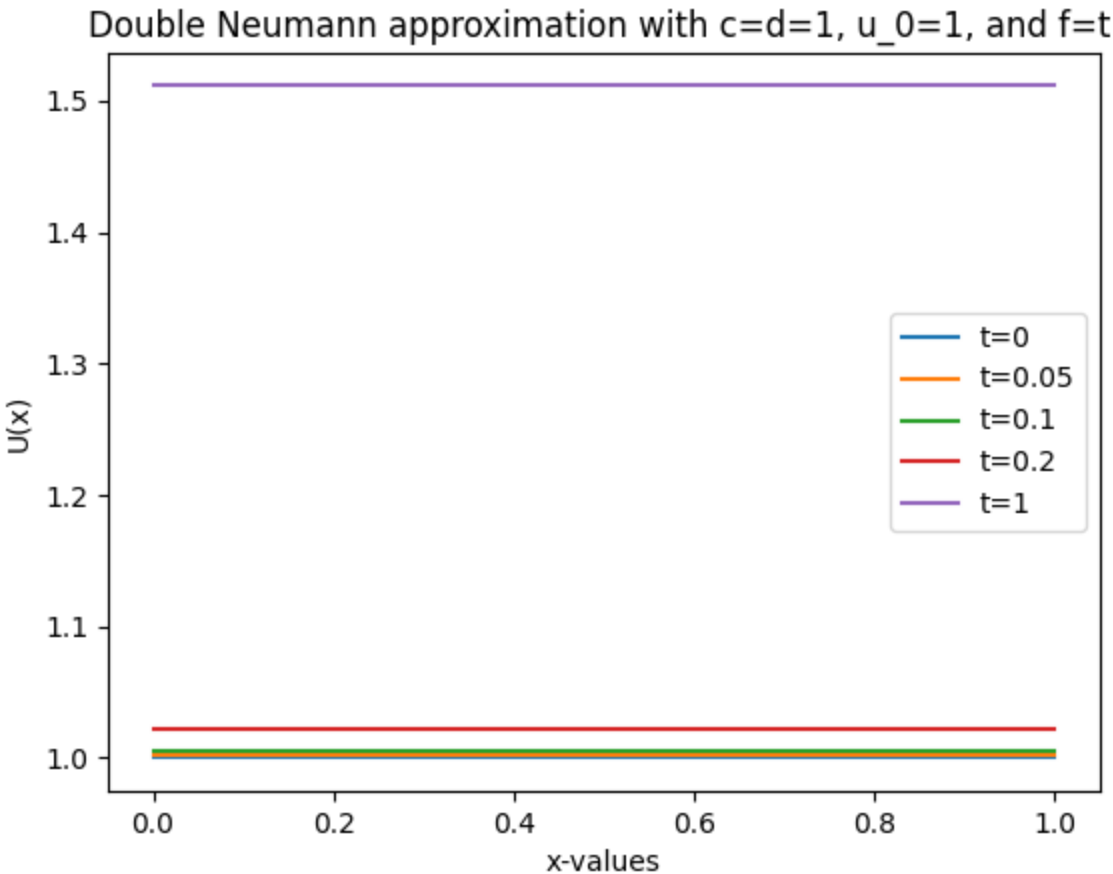

Left Neumann and Right Dirichilet approximation with c=d=x,
u_0=0, and f=0.
1.0
0.8
0.6
0.4
0.2
0.0
U(x)
0.0
0.2
0.4
0.6
0.8
1.0
x-values
t=0
t=0.05
t=0.1
t=0.2
t=1
t=2

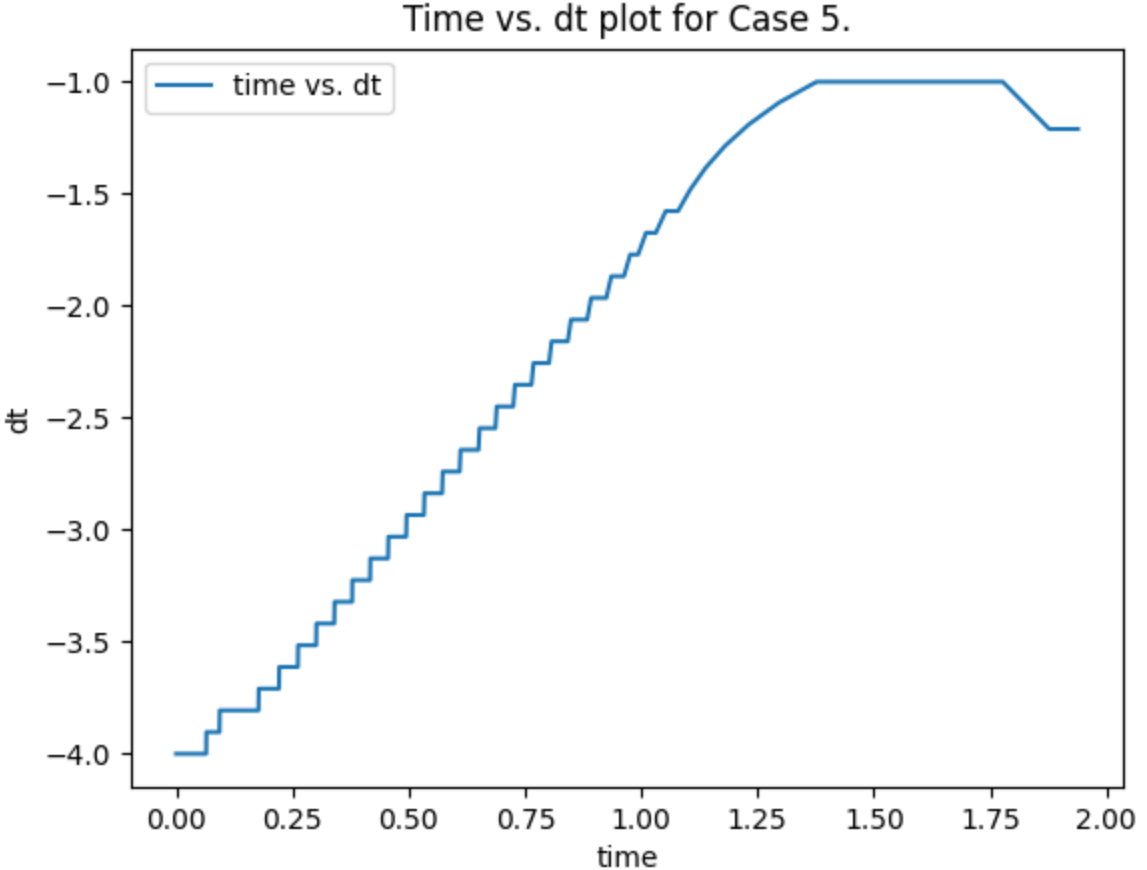

Time vs. dt plot for Case 3.
time vs. dt
−1.0
−1.5
−2.0
−2.5
−3.0
−3.5
−4.0
dt
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
time

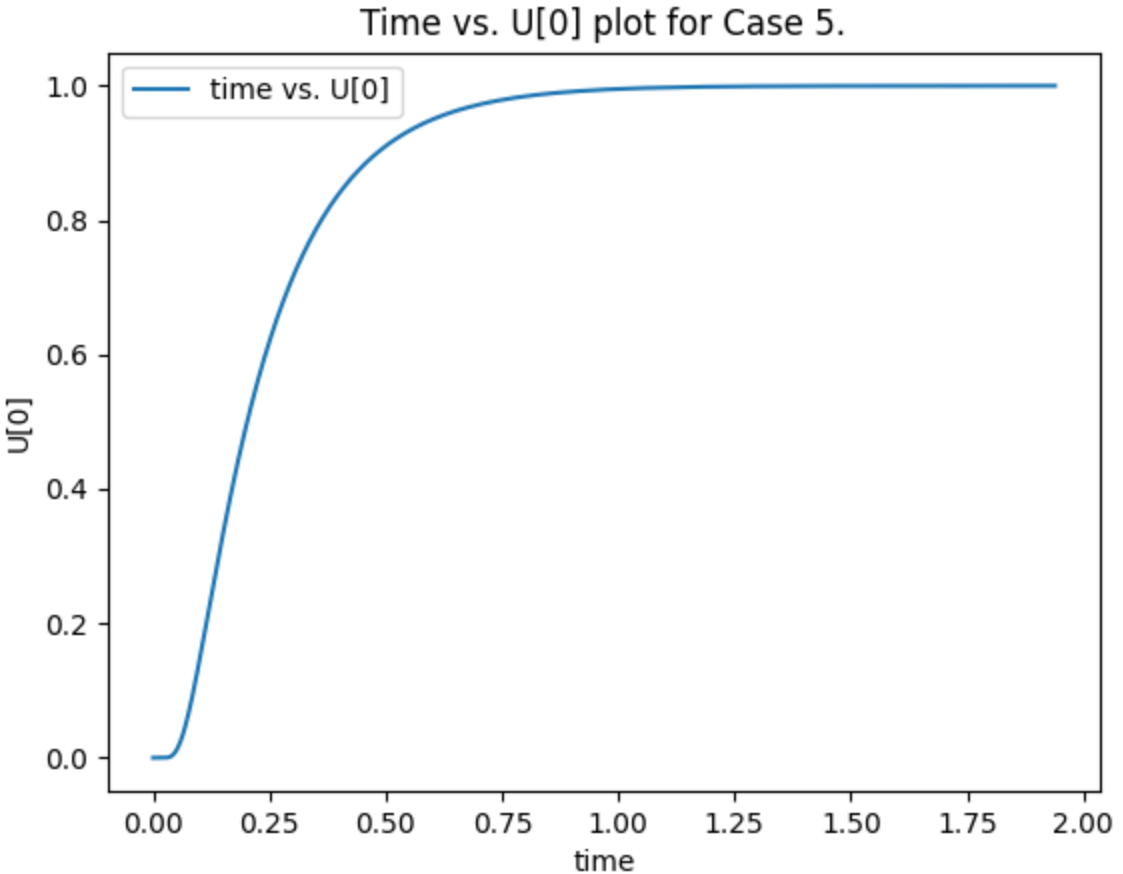

Time vs. U[0] plot for Case 3.
1.0
0.8
0.6
0.4
0.2
0.0
U[0]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
time
time vs. U[0]

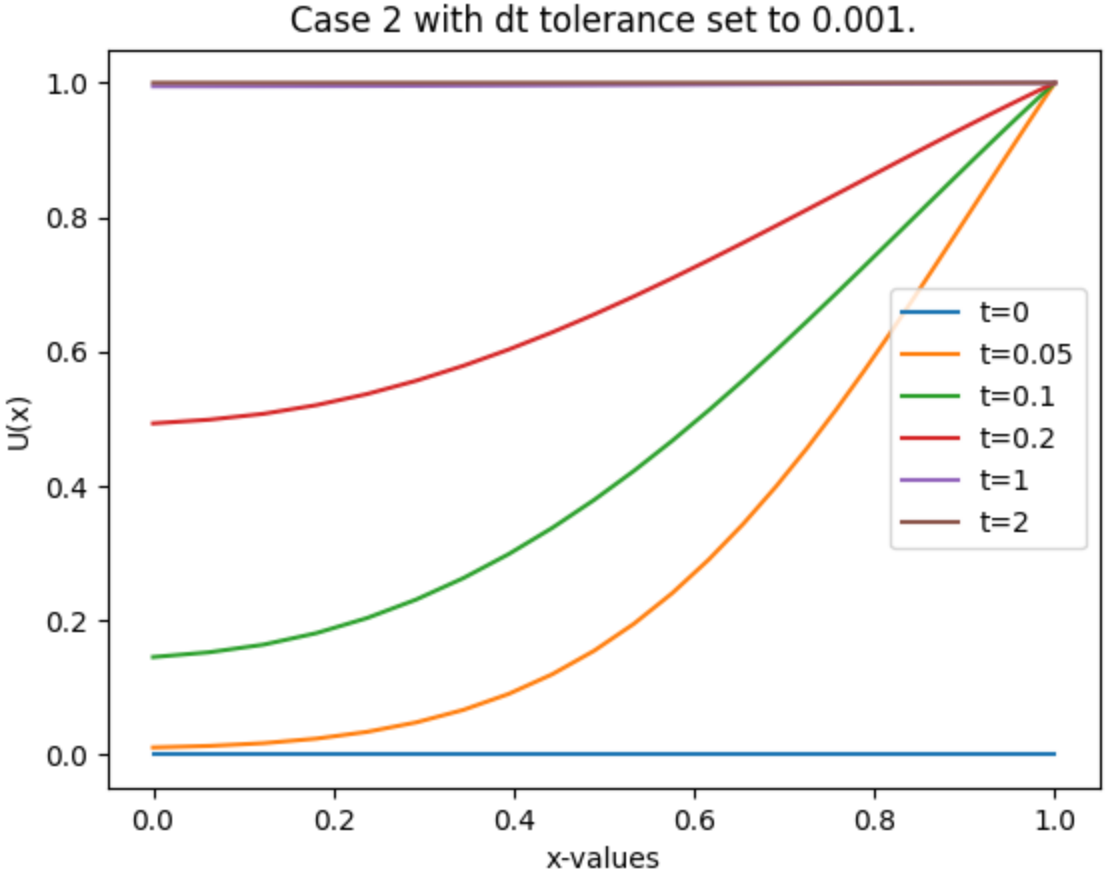

Left Neumann and Right Dirichilet approximation with
c=d=x^2, u_0=0, and f=0.
U(x)
x-values
0.0
0.2
0.4
0.6
0.8
1.0
t=0
t=0.05
t=0.1
t=0.2
t=1
t=2


Time vs. dt plot for Case 4.
time vs. dt
−1.5
−2.0
−2.5
−3.0
−3.5
−4.0
dt
0.0
0.2
0.4
0.6
0.8
1.0
time


Double Neumann approximation with c=d=1, u_0=1, and f=t.
1.5
1.4
1.3
1.2
1.1
1.0
U(x)
0.0
0.2
0.4
0.6
0.8
1.0
x-values
t=0
t=0.05
t=0.1
t=0.2
t=1


Time vs. dt plot for Case 5.
time vs. dt
−1.0
−1.5
−2.0
−2.5
−3.0
−3.5
−4.0
dt
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
time


Time vs. U[0] plot for Case 5.
time vs. U[0]
1.0
0.8
0.6
0.4
0.2
0.0
U[0]
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
time


Case 2 with dt tolerance set to 0.001.
U(x)
x-values
0.0
0.2
0.4
0.6
0.8
1.0
t=0
t=0.05
t=0.1
t=0.2
t=1
t=2