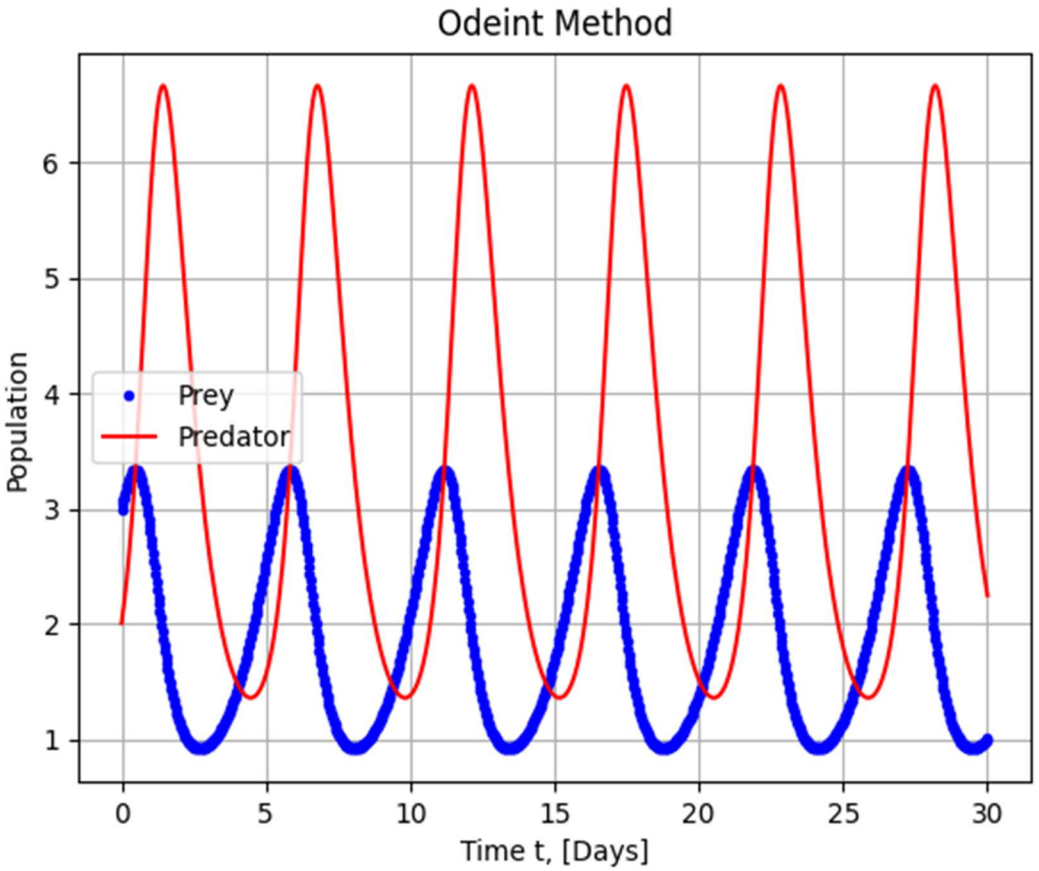
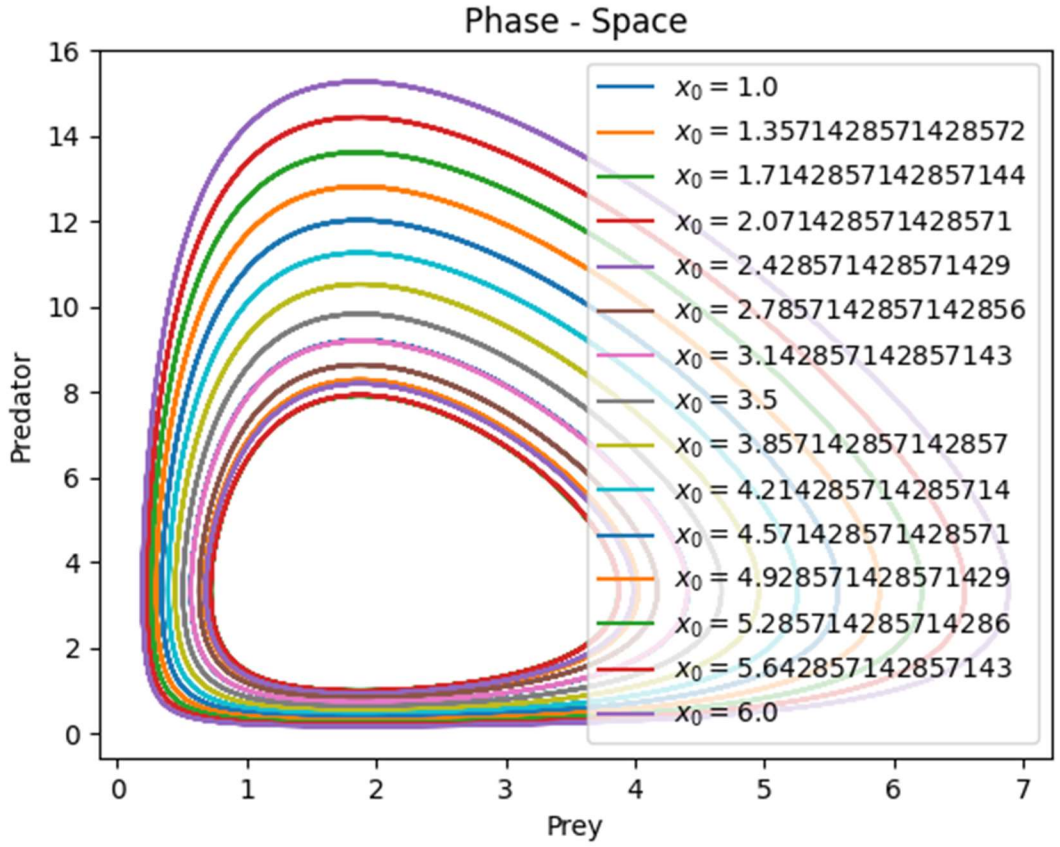
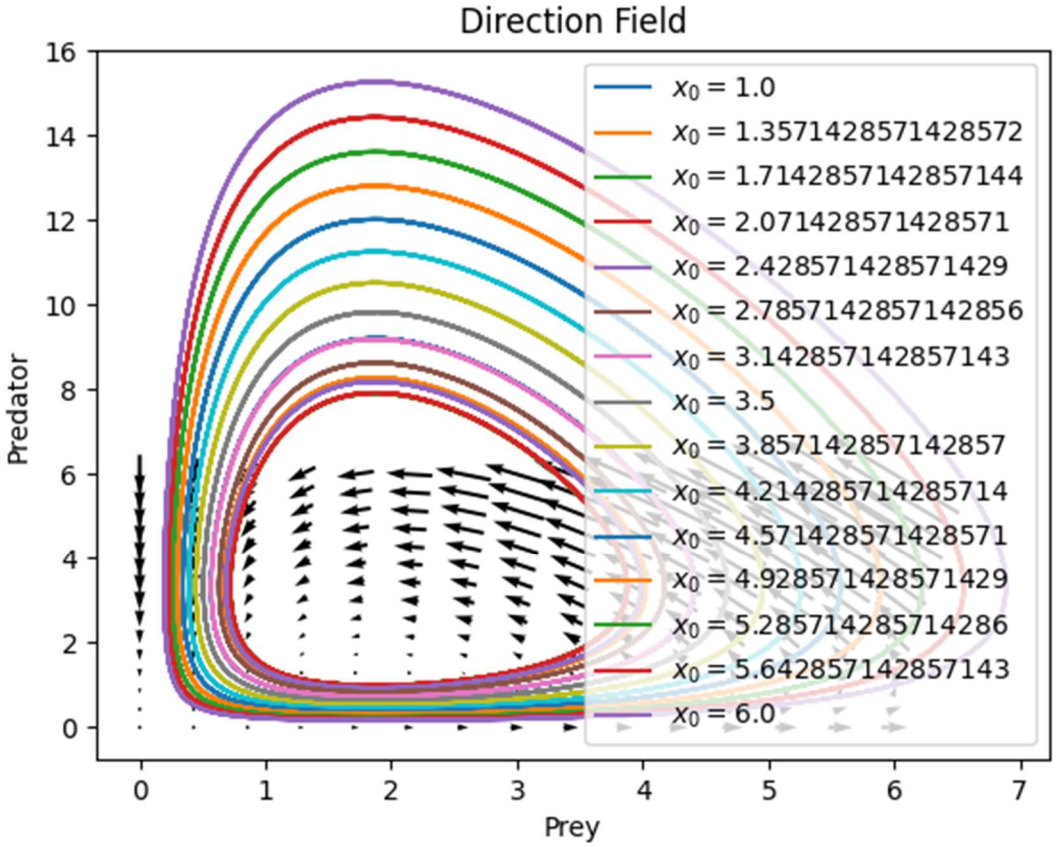
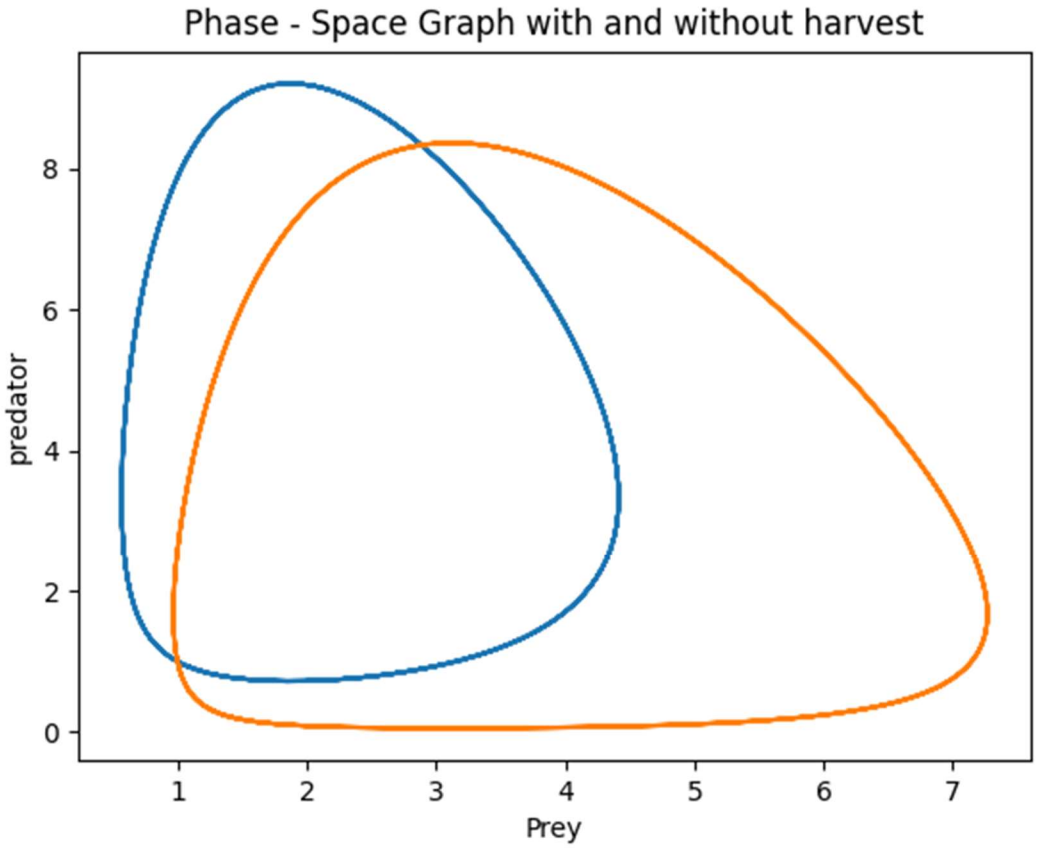


(Classic Lotka Volterra – Linearized Version)


Phase - Space
Predator
Prey
0
2
4
6
8
10
12
14
16
0
1
2
3
4
5
6
7
x_0 = 1.0
x_0 = 1.3571428571428572
x_0 = 1.7142857142857144
x_0 = 2.071428571428571
x_0 = 2.428571428571429
x_0 = 2.7857142857142856
x_0 = 3.142857142857143
x_0 = 3.5
x_0 = 3.857142857142857
x_0 = 4.214285714285714
x_0 = 4.571428571428571
x_0 = 4.928571428571429
x_0 = 5.285714285714286
x_0 = 5.642857142857143
x_0 = 6.0


Direction Field
Predator
Prey
0
2
4
6
8
10
12
14
16
0
1
2
3
4
5
6
7
x_0 = 1.0
x_0 = 1.3571428571428572
x_0 = 1.7142857142857144
x_0 = 2.071428571428571
x_0 = 2.428571428571429
x_0 = 2.7857142857142856
x_0 = 3.142857142857143
x_0 = 3.5
x_0 = 3.857142857142857
x_0 = 4.214285714285714
x_0 = 4.571428571428571
x_0 = 4.928571428571429
x_0 = 5.285714285714286
x_0 = 5.642857142857143
x_0 = 6.0


Phase - Space Graph with and without harvest
predator
Prey
0
2
4
6
8
1
2
3
4
5
6
7