Mridul Garg
180123028

Monte Carlo Simulation
Assignment 10

Ques1:
To produce the required 95% confidence interval, some of the steps followed were:

- The seed was set to 50 for reproducibility.
- The uniform random samples were generated using the in-built Numpy function
- The Ratio is taken as normal estimator to antithetic estimator

The values obtained values are:

	M	I_M_Y1	CNF INTRVL I_M_Y1	I_M_Y2	CNF INTRVL I_M_Y2	RATIO
0	100	1.94885	[1.85986, 2.03784]	2.00095	[1.99518, 2.00671]	15.42288
1	1000	1.98484	[1.9577, 2.01197]	2.00119	[1.99922, 2.00316]	13.77411
2	10000	1.99566	[1.98696, 2.00435]	2.00007	[1.99942, 2.00071]	13.48062
3	100000	2.00091	[1.99819, 2.00363]	2.00000	[1.9998, 2.00021]	13.26829

Observations:

- As the value of M increases, the expected values of both the estimators grow closer