Q1 – It has been suggested that that population of the US may be modeled by the formula

Where t is the date in years

Write a program to compute and display the population every ten years from 1790 to 2000

Plot a graph of the population against years

t = 1790:10:2000;

P = 197273000./(1+exp(-0.03\*(t-1913.25)));

disp([t’ , p’]);

plot(t,P), grid, xlabel(‘Years’), ylabel(‘Pupolation’),

title(‘Population against time in US’);

Q2-

Write a Matlab program to find the following series:

1 – 1/3 + 1/5 – 1/7 + 1/9 - … - 1/1003

1. Using for loop
2. By vectorization

S = 0;

sign = -1;

for i = 1:2:1003

sign = -sign;

S = S + sign / i;

end

X = 1:4:1001;

Y = 3:4:1003;

S = sum(1./X) – sum(1./Y);

Q3- Use Matlab to evaluate the following expression:

* 1000(1+0.15/12)50

1000\*(1+0.15/12)^50

* (0.000123 + 5.678\*10-3)\*0.4577\*10-4

(0.000123 + 5.678\*10^(-3))\*0.4577\*10^(-4)

(0.000123 + 5.678e-3)\*0.4577e-4

Q4 Set up a vector n with elements 1 2 3 4 5

Use Matlab array operations on the vector to set up the following four vectors:

2 4 6 8 10

½ 1 3/2 2 5/2

1 ½ 1/3 ¼ 1/5

1 1/22 1/32 1/42 1/52

n = [1 2 3 4 5];

n\*2;

n/2;

1./n n.\1 n.^-1

1./n.^2 n.^2.\1 n.^-2