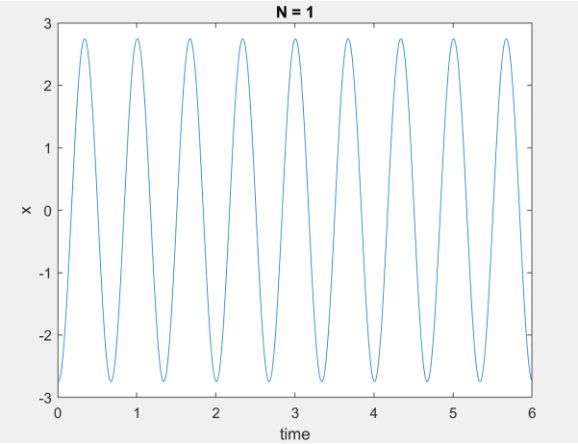
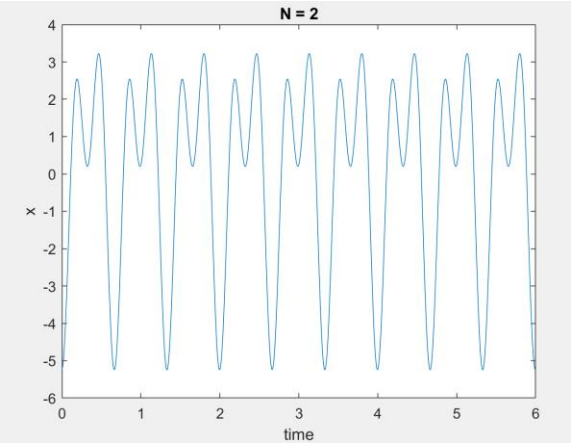
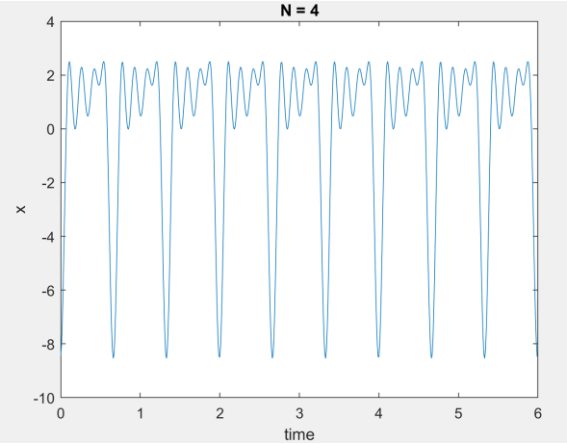
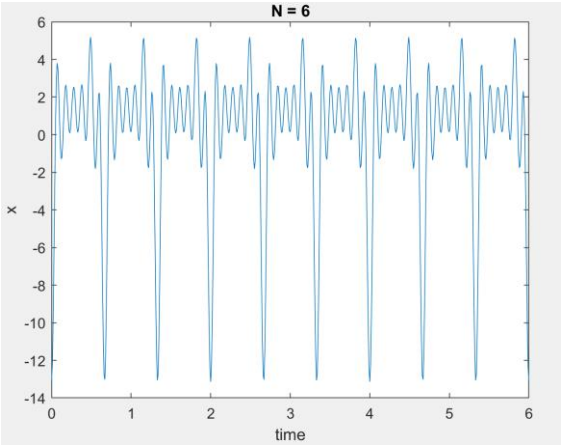
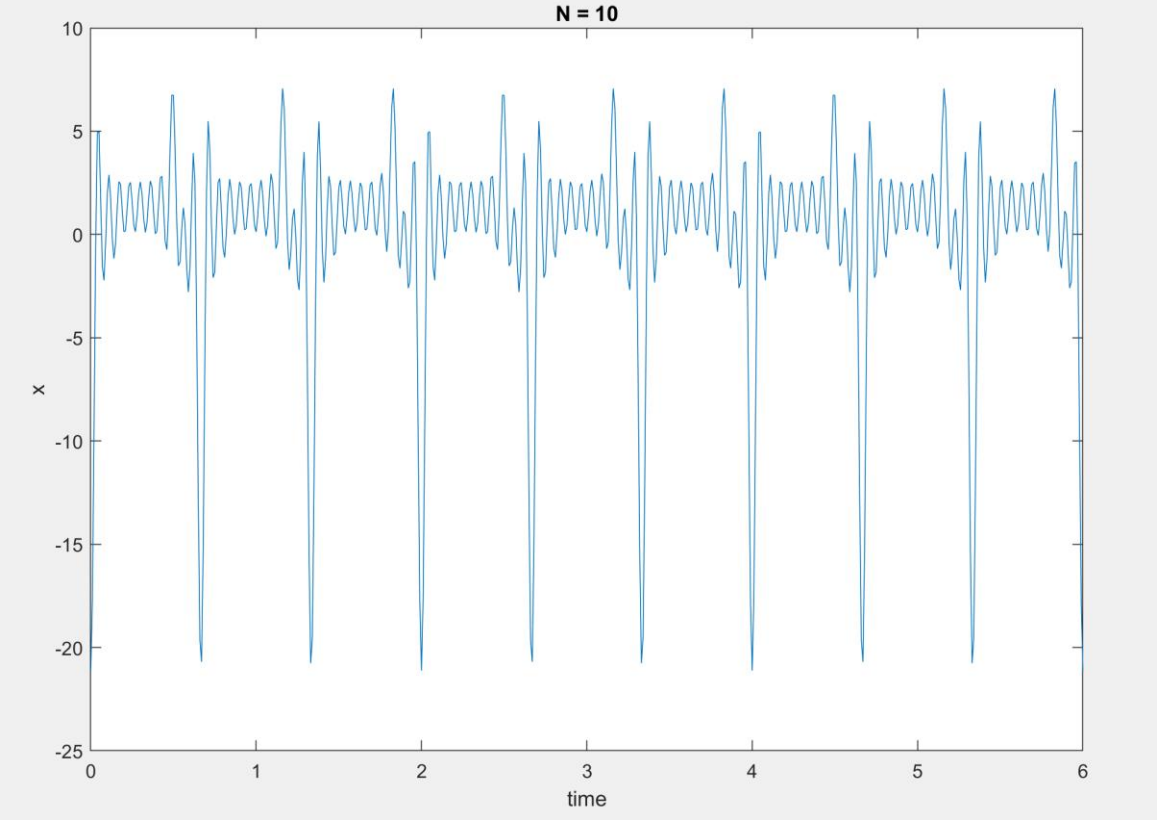
```
%%%%%%%%%%%%%%%%%Part 5 %%%%%%%%%%%%%%
syms t
syms k
syms y(t)
y(t) = 0;

interval = 0:0.01:6;

for k = -10:1:10 %%%%%CHANGE THIS VALUE -N:1:N FOR DIFFERENT Ns

    f =  4*t*exp(-j*k*3*pi*t);
    f2 =  (3-t)*exp(-j*k*3*pi*t);
    f3 =  t*exp(-j*k*3*pi*t);
    part1 =  int(f,t,[0 0.5]);
    part2 =  int(f2,t,[0.5 1.5]);
    part3 =  int(f3,t,[1.5 2]);

    weight =  (1/2)*(part1+part2+part3)*(j*k*3*pi);

    y(t) = y(t) + weight.*(exp(j*k*3*pi*t));


end

figure(1)
plot(interval, real(y(interval)));
title("N = 10");
xlabel("time");
ylabel("x");
```






N = 4
x
time


N = 6
x
time


N = 10
x
time