```
23071A1042
Clc;
clear all;
close all;
t_start=0;
t_step=1e-2;
t_final=5;
k=1;
for t=t_start:t_step:t_final
    x(k)=sin(2*pi*t);
    t_vec(k)=t;
    k=k+1;
end
figure(1)
subplot(211)
plot(t_vec,x,'LineWidth',2)
subplot(212)
```
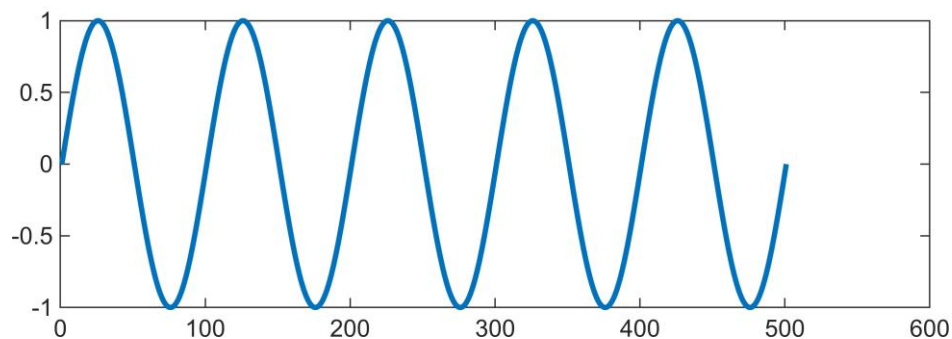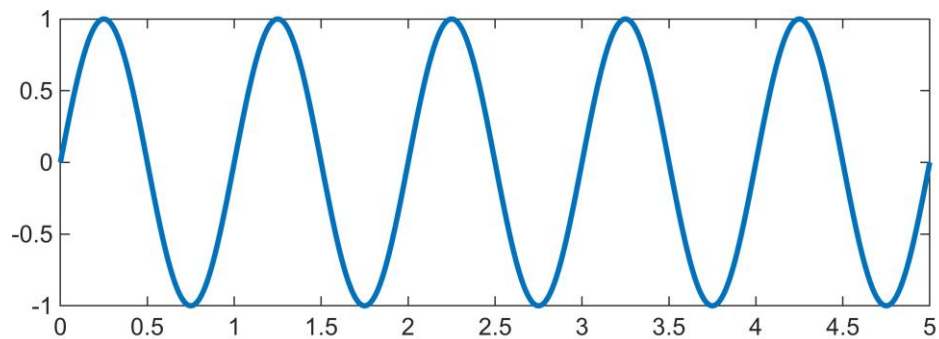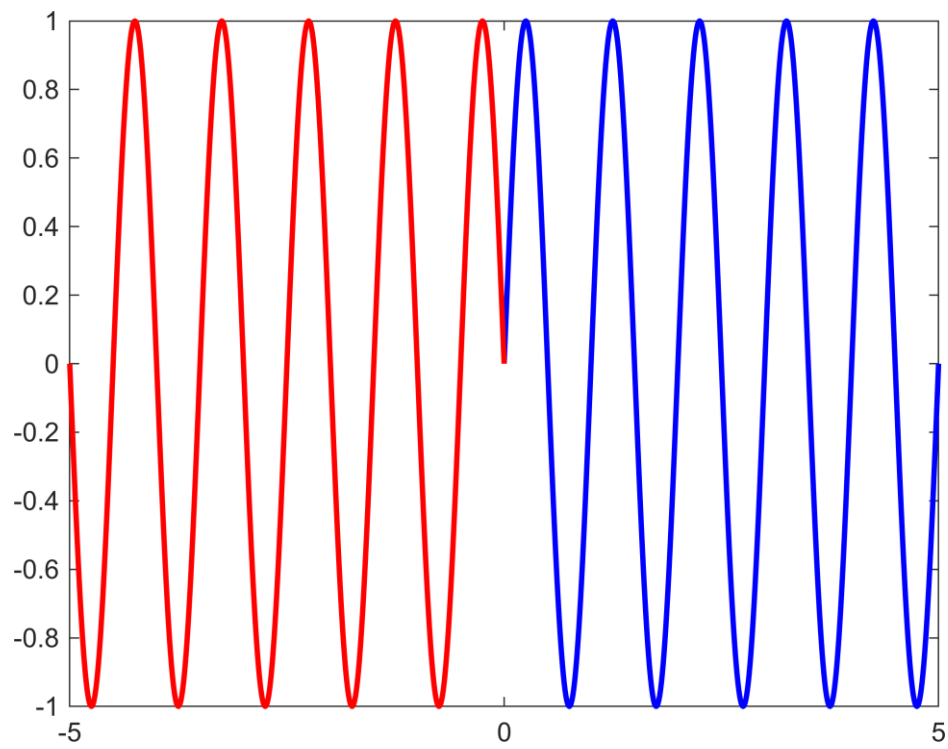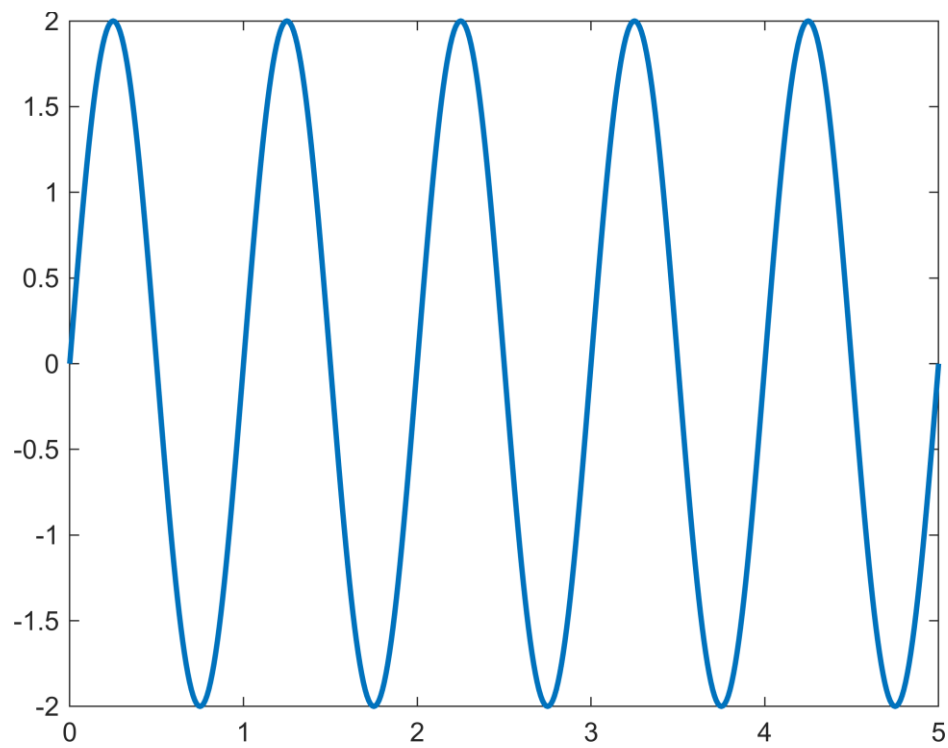


```
t_r=t_start;
for kr=length(x):-1:1
    x_r(kr)=x(length(x)-kr+1);
    tr_vec(kr)=t_r;
    t_r=t_r-t_step;
end
figure(2)
plot(t_vec,x,'b','LineWidth',2)
```

```
hold on
plot(tr_vec,x_r,'r','LineWidth',2)
```
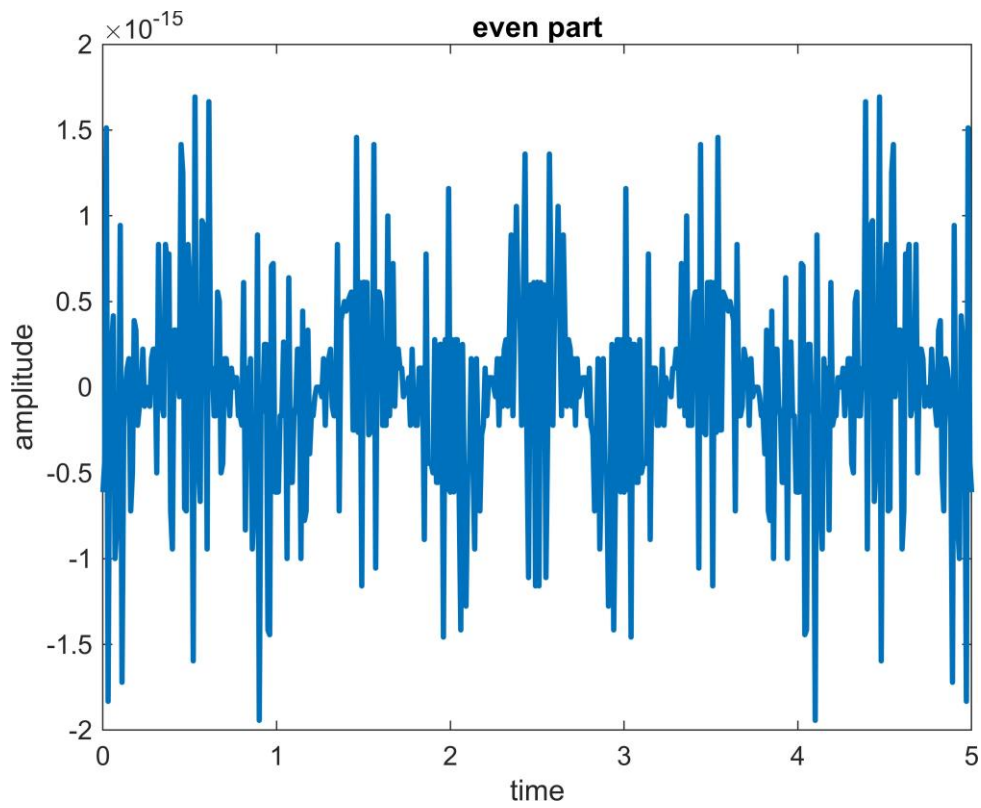


```
E=x-x_r;
figure(3)
plot(t_vec,E,'LineWidth',2)
```

```matlab
SSE=sum(E.^2);
if SSE<1e-20
    disp(sprintf('The given signal is even signal 23071a1041'));
else
    disp(sprintf('The given signal is odd signal'));
end
```

The given signal is odd signal

```matlab
x_e=(x+x_r)/2;
x_o=(x-x_r)/2;
figure(4)
plot(t_vec,x_e,'LineWidth',2)
title('even part 23071a1041');
xlabel('time');
ylabel('amplitude');
```
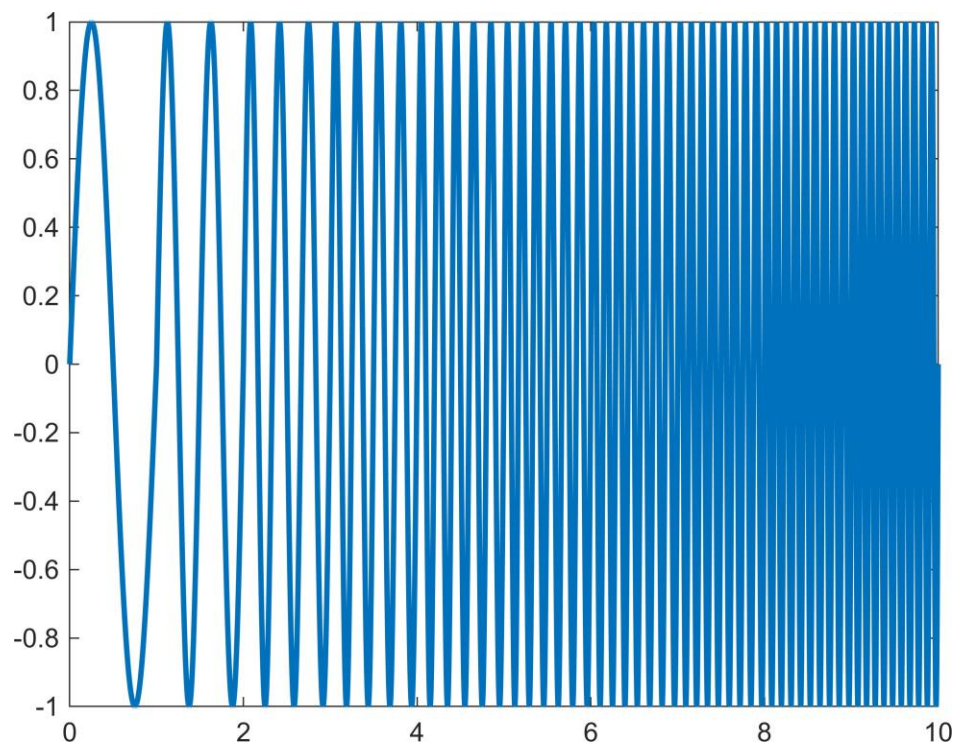
```
figure(5)
plot(t_vec,x_o,'LineWidth',2)
title('odd part');
xlabel('time');
ylabel('amplitude');
```

odd part
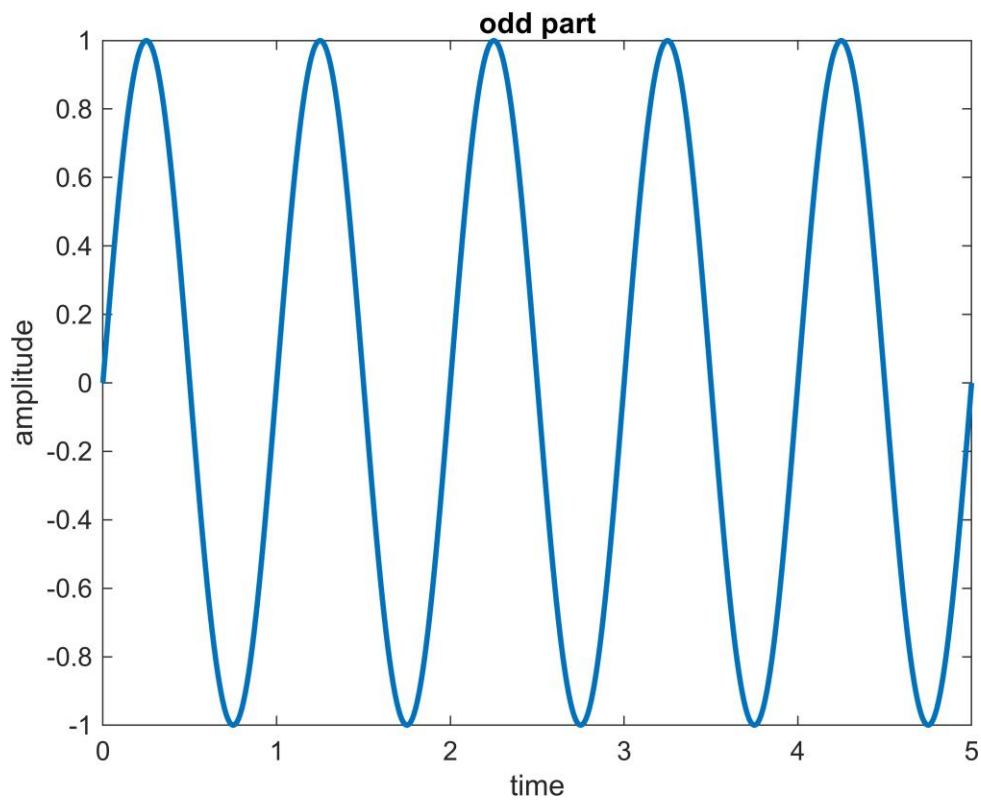
```
23071A1042(Srinija)

 t_start=0;
 t_step=1e-3;
 t_final=10;
 f=1;
 k=1;
 for t=t_start:t_step:t_final
     if t>=f
         f=f+1;
     end
     x(k)=sin(2*pi*f*t);
     t_vec(k)=t;
     k=k+1;
 end
 plot(t_vec,x,'LineWidth',2)
```
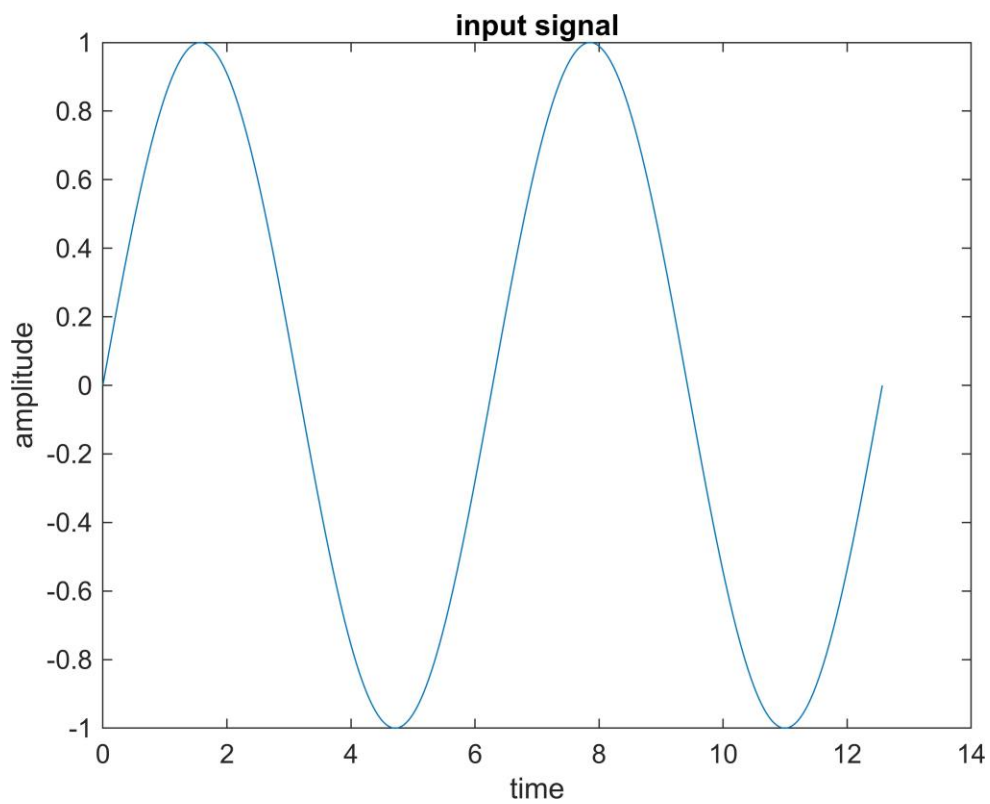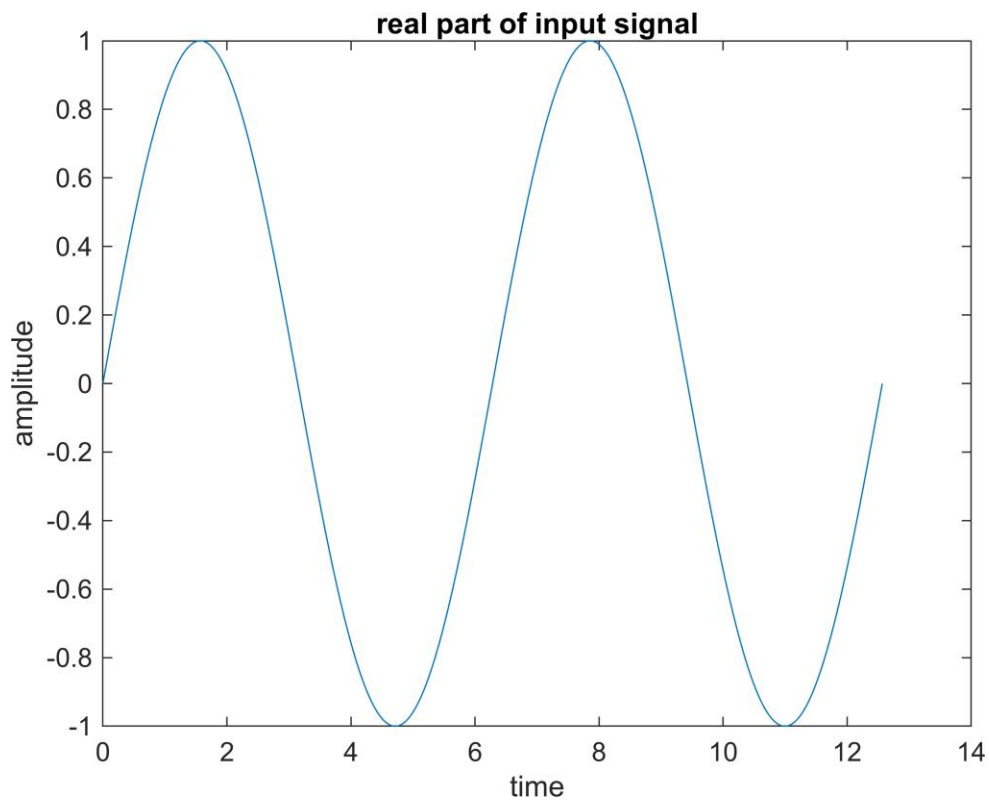
```
t2=0:0.001:4*pi;
x2=sin(t2)+j*cos(t2);
plot(t2,x2);
```

Warning: Imaginary parts of complex X and/or Y arguments ignored.
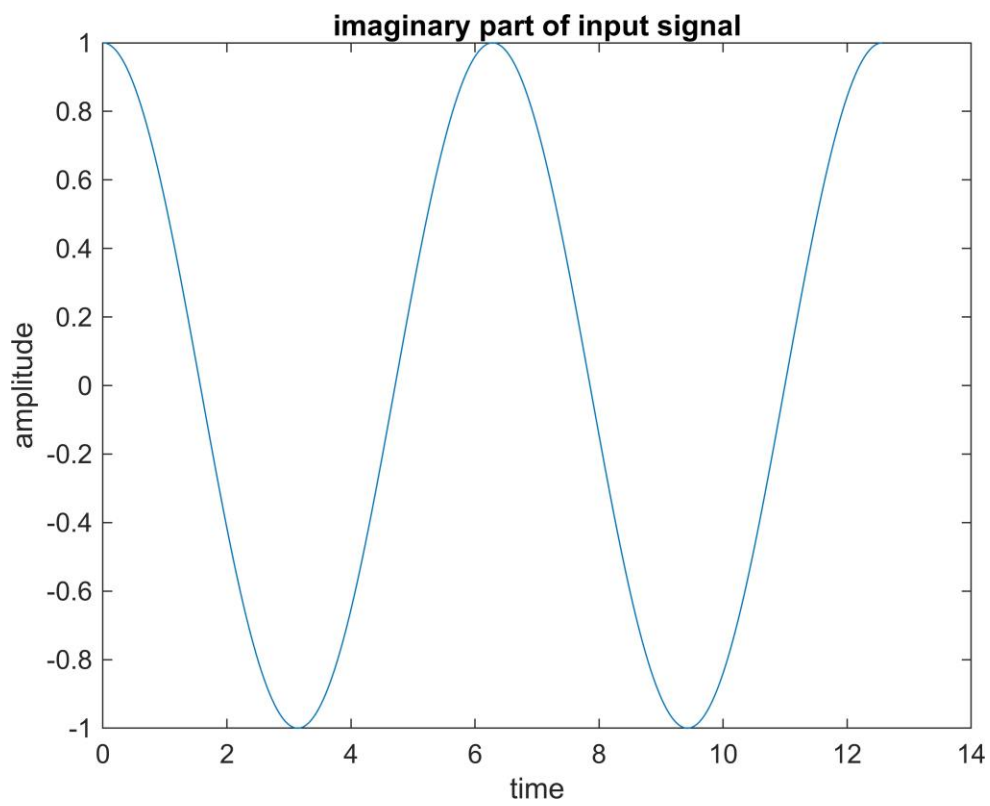
```
title('input signal');
xlabel('time');
ylabel('amplitude');
```

```
figure;
plot(t2,real(x2));
title('real part of input signal');
xlabel('time');
ylabel('amplitude');
```

```
figure;
plot(t2,imag(x2));
title('imaginary part of input signal');
xlabel('time');
ylabel('amplitude');
```

imaginary part of input signal

23071A1042(srinija)