

# Ukeoppgaver

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# 1

Matlab kode:

```
%% Oppgave 1
F = 700;
Fs = 2800; %2800, 1190, 490 Hz
t = 0: 1/Fs :0.1;
y = sin(2*pi*F*t);
plot(t,y)
%sound(y,Fs)

%freqz(y,Fs)
%ck = fftshift(fft(y,2*length(y)));
%plot(y,ck)

%% 6.03 ?
Fs = 20;
t = linspace(-Fs,Fs, 200);
n = linspace(-Fs,Fs, 200/0.5);

xn = 2*cos(0.5*pi*n - pi/3) - 3*sin(0.8*pi*n);
xc = 2*cos(10*pi*t-pi/3) - 3*sin(16*pi*t);

plot(t,xc)
hold('on')
plot(n,xn)

%% Oppgave 6.17
FL = 105;
FH = 145;
dF = 0.01;
GB = 10;
FL2 = FL - GB/2;
FH2 = FH + GB/2;
Fs = 100;
F = -150:dF:150;
X = zeros(size(F));
XP = zeros(size(F));
```

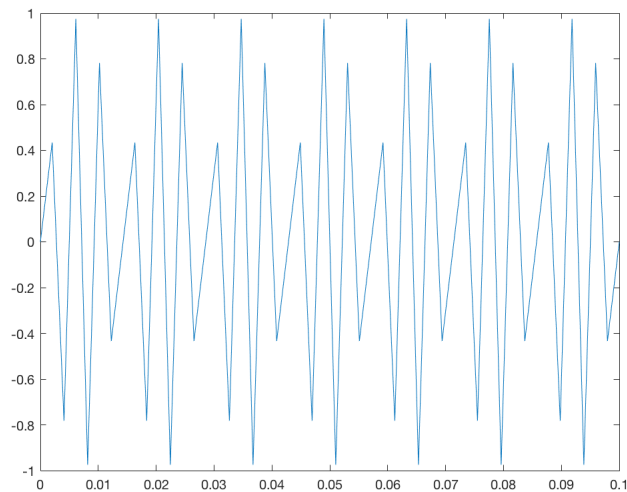
```

XN = zeros(size(F));
for j = -10:10
    ind = F > FL + j*Fs & F < FH + j*Fs;
    X(ind) = X(ind) + 1;
    XP(ind) = XP(ind) + 1;
end
ind = X == 0;
X(ind) = nan;
plot(F,XP, F, XN)
xlim([-150 150])
ylim([0 1.5])

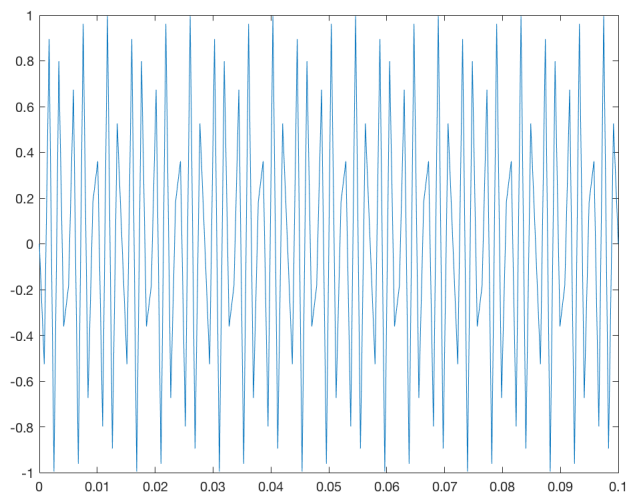
```

### 1..1 assignment 1

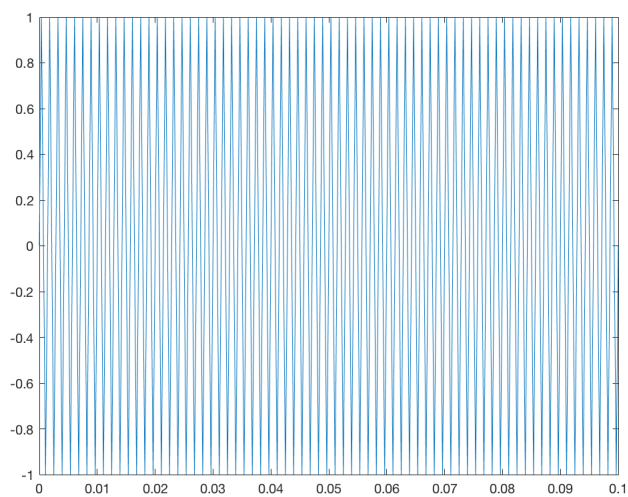
RESULTAT FRA OPPG 6.01



Figur 1: plot1



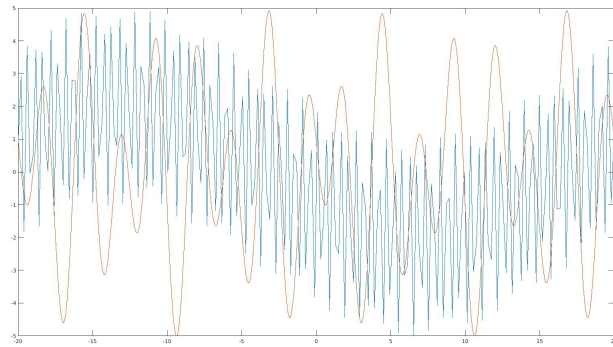
Figur 2: plot2



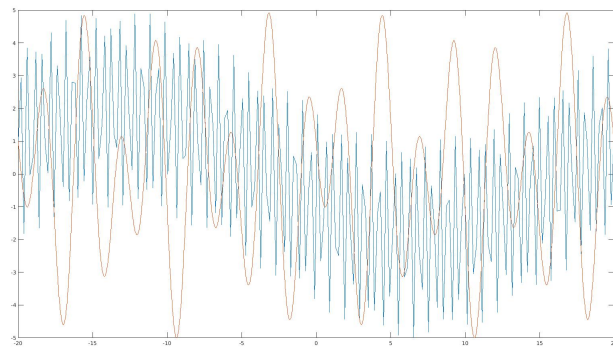
Figur 3: plot3

### 1..2 assignment 3

RESULTAT FRA OPPG 6.03



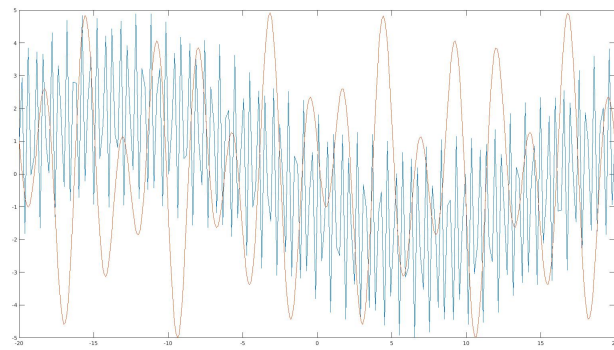
Figur 4: plot1



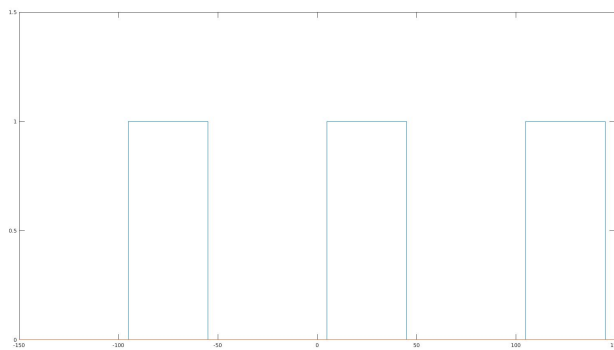
Figur 5: plot2

### 1..3 assignment 6.17

RESULTAT FRA OPPG 6.17



Figur 6: plot3



Figur 7: plot1