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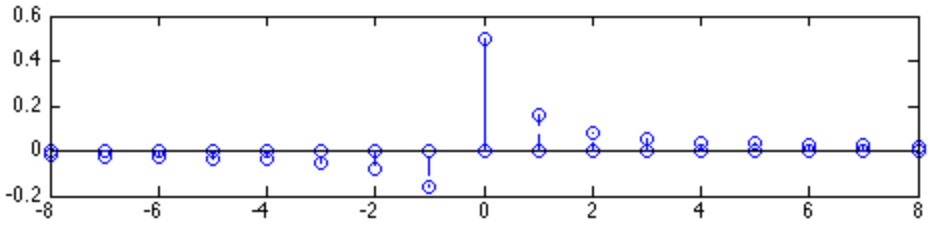
Task2

```
N = 8;
Dn = zeros(1,2*N + 1);
% Series coefficients
for n =-N:N;
    Dn(n+N+1) = 1i/(2 * pi * n);
end
% D0 = 1/2
Dn(N+1) = 1/2;
```

Plot of series coefficients

```
subplot(311);
n = -8:8;
stem(n,real(Dn),'-');
hold
stem(n,imag(Dn),'--');
```

Current plot held



Plot of truncated series

```
t = -2:.01:2;
omega0 = 2 * pi;
ft = mod(t,1);
fn = myfs(Dn,omega0,t);
subplot(312);
plot(t,ft,t,fn);

% Plot of approximation error
subplot(313);
plot(t,ft-fn);

e2 = sum((ft-fn).^2)*0.01;
hold off;
```

```
Warning: Imaginary parts of complex X and/or Y arguments ignored
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```
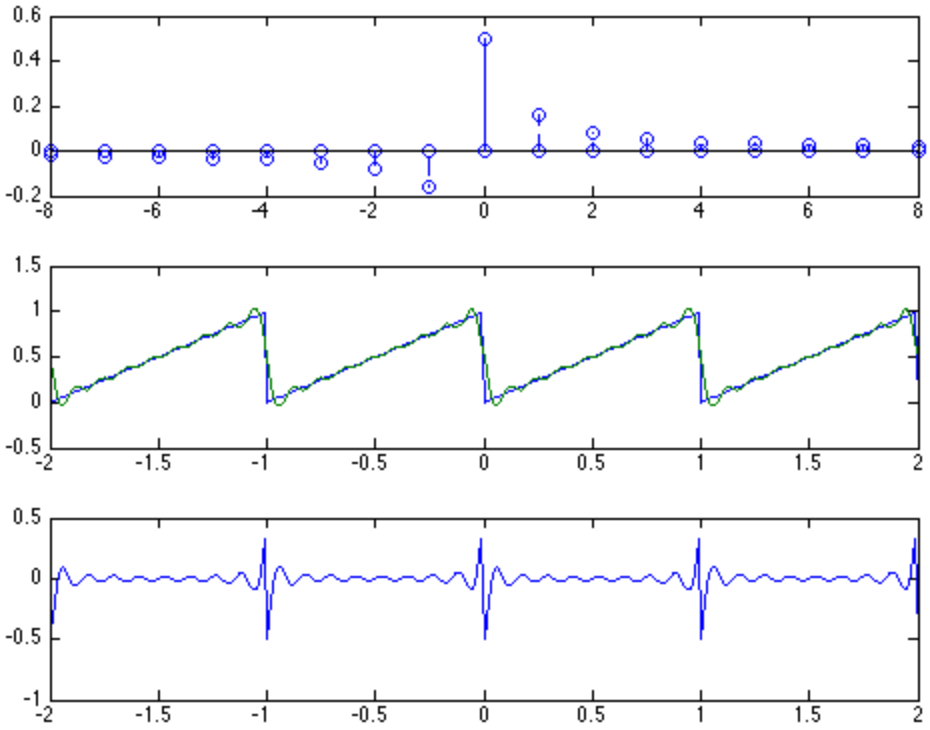



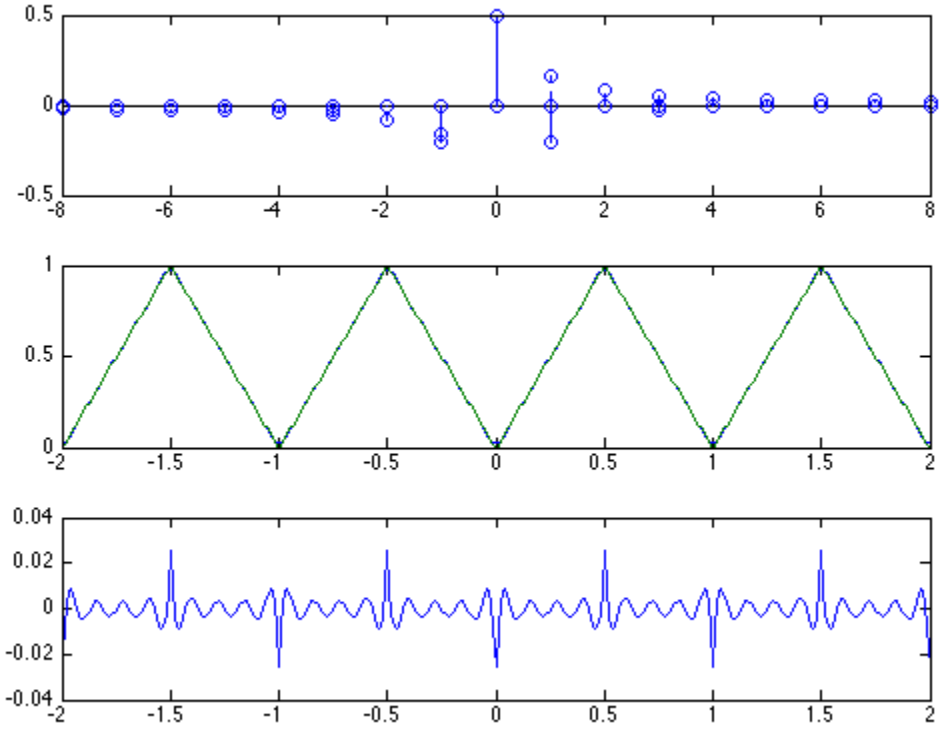
Task 3

triangular signal

```
N = 8;
Dn = zeros(1,2*N + 1);
% Series coefficients
for n =-N:N;
    Dn(n+N+1) = ((-1)^n - 1)/ ((n * pi)^2);
end
% D0 = 1/2
Dn(N+1) = 1/2;

% Plot of series coefficients
subplot(311);
n = -8:8;
stem(n,real(Dn),'-');
hold on
stem(n,imag(Dn),'--');


t = -2:.01:2;
omega0 = 2 * pi;

ft = abs(2 .*(t - floor(t+.5) ) );
fn = myfs(Dn,omega0,t);
```

```
subplot(312);
plot(t,fn,t,ft);

% Plot of approximation error
subplot(313);
plot(t,ft-fn);

e3 = sum((ft-fn).^2)*.01;

hold off
ratio = e3/e2
```

```
Warning: Imaginary parts of complex X and/or Y arguments ignored

Warning: Imaginary parts of complex X and/or Y arguments ignored

ratio =

   0.0045 - 0.0000i
```



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