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```

clc;
clear all;
close all;

x = [1,2,3,4];
N = length(x);
X = zeros(1,N);
w40 = 1;
w41 = exp(-2j*pi/N);

v11 = x(1) + w40*x(3);
v12 = x(1) - w40*x(4);
v13 = x(2) + w41*x(3);
v14 = x(2) + w41*x(4);

X(1) = v11 + w40*v13;
X(2) = v12 + w40*v14;
X(3) = v13 + w40*v13;
X(4) = v14 + w40*v14;

Y = fft(x);

subplot(2,1,1);
stem(abs(X));
title("myFFT");
subplot(2,1,2);
stem(abs(Y));
title("In-built FFT")

Y
X

Y =

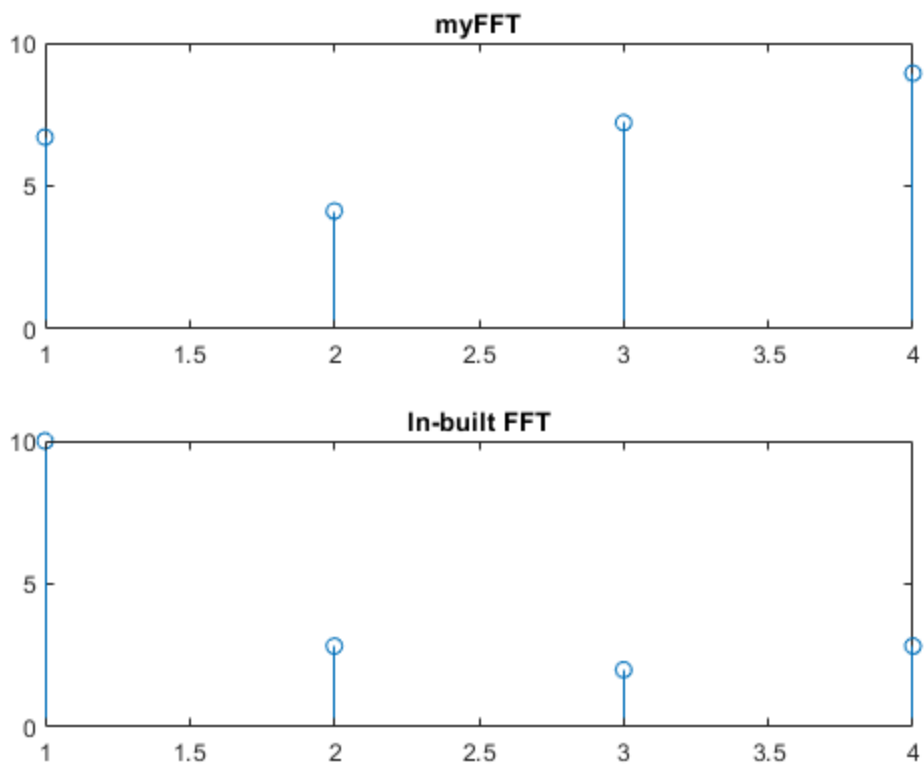
    10.0000 + 0.0000i   -2.0000 + 2.0000i   -2.0000 + 0.0000i   -2.0000 - 2.0000i

X =

    6.0000 - 3.0000i   -1.0000 - 4.0000i    4.0000 - 6.0000i    4.0000 - 8.0000i

```

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