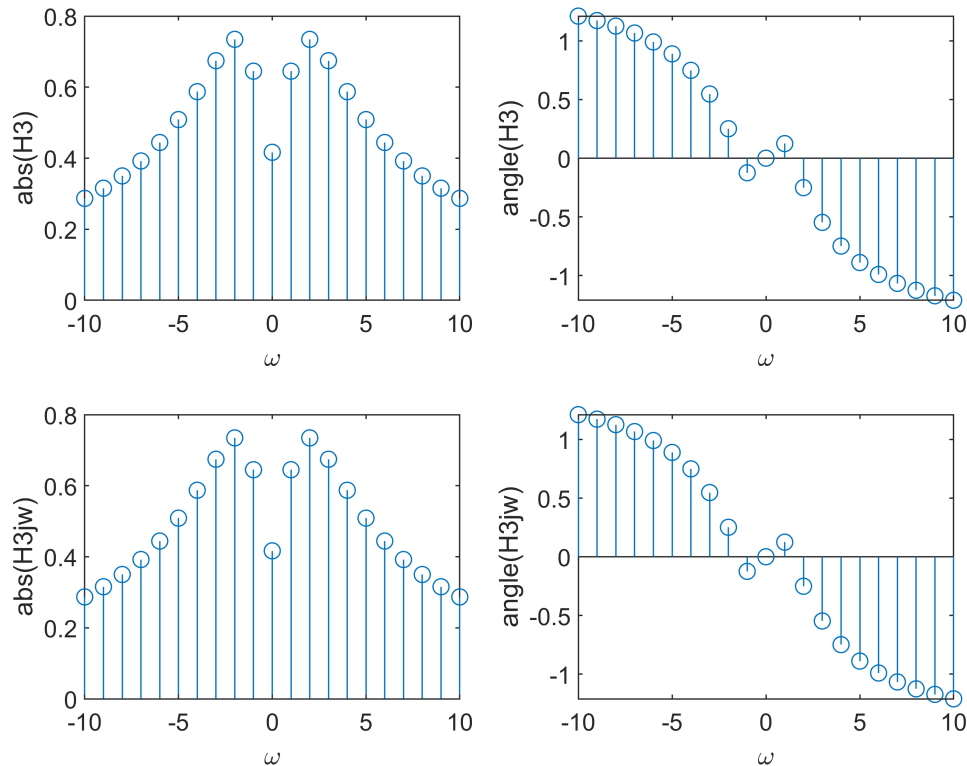


```

b2=[3,10,5];
a2=[1,7,16,12];
[r2,p2]=residue(b2,a2);
w2=-10:1:10;
H3=r2(1)./(1i*w2-p2(1))+r2(2)./(1i*w2-p2(2))+r2(3)./((1i*w2-p2(3)).^2);
subplot(2,2,1),stem(w2,abs(H3)),xlabel('\omega'),ylabel('abs(H3)');
subplot(2,2,2),stem(w2,angle(H3)),xlabel('\omega'),ylabel('angle(H3)');
H3jw=(3*((1i.*w2).^2)+10*(1i.*w2)+5)./((1i.*w2).^3+7*((1i.*w2).^2)+16*(1i.*w2)+12);
subplot(2,2,3),stem(w2,abs(H3jw)),xlabel('\omega'),ylabel('abs(H3jw)');
subplot(2,2,4),stem(w2,angle(H3jw)),xlabel('\omega'),ylabel('angle(H3jw)');

```



%the first two pictures are FT of frequency response which was calculated
 %by r1 and p1,while the last two pictures are calculated by a1 and b1
 %we can know they are the same