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i)

k = 3;

r = [4/5 , 7/6];

p = [-1/5 , 1/6];

[num , den] = residuez(r , p , k)

output:-

num =

4.966666666666667 0.200000000000000 -0.100000000000000

den =

1.000000000000000 0.033333333333333 -0.033333333333333

* H(z) =

ii)

r1 ,p1, k1 = residuez(-4 , [16 , 16 , 4]); % the first term

r2 ,p2, k2 =residuez([5] , [1 , 0 , 0.64] ) ;% the third term

r = [r1' ,-2/4, r2' ];

p = [p1' , 6/4 , p2'];

k = k1 + k2;

num , den = residuez(r , p , k)

output

num =

4.966666666666667 0.200000000000000 -0.100000000000000

den =

Columns 1 through 3

6.750000000000000 -1.625000000000000 -9.504999999999999

Columns 4 through 6

-5.065000000000000 -3.643750000000000 -2.400000000000000

Column 7

-0.540000000000000