

```

t=linspace(0,20,1000);
A=[1,1];%因为  $H(s)=1/(1+RCs)$ ,  $RC=1$ ,
B=1;%所以根据公式能知晓  $A=[1,1]$ ,  $B=1$ ;
apos_k=zeros(1,5);
aneg_k=zeros(1,5);
s=zeros(5,1000);
for k=(1:5)
    apos_k(k)=(1-cos(pi*k))*sin(pi*k/2)/(pi*k);
    aneg_k(k)=(1-cos(pi*(-k)))*sin(pi*(-k)/2)/(pi*(-k));
    s(k,:)=apos_k(k)*exp(1i*k*t)+aneg_k(k)*exp(1i*(-k)*t);
    y(k,:)=lsim(B,A,s(k,:),t)
end

```

```

y = 5×1000
    0.0000    0.0252    0.0500    0.0742    0.0979    0.1211    0.1438    0.1659 ...
   -0.0000    0.0042    0.0083    0.0123    0.0163    0.0201    0.0238    0.0274
   -0.0000   -0.0025   -0.0050   -0.0074   -0.0097   -0.0119   -0.0141   -0.0161
   -0.0000    0.0018    0.0036    0.0052    0.0069    0.0084    0.0099    0.0113
   -0.0000   -0.0014   -0.0028   -0.0041   -0.0053   -0.0064   -0.0075   -0.0085

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    0.0000    0.0252    0.0500    0.0742    0.0979    0.1211    0.1438    0.1659 ...
     0         0         0         0         0         0         0         0
   -0.0000   -0.0025   -0.0050   -0.0074   -0.0097   -0.0119   -0.0141   -0.0161
   -0.0000    0.0018    0.0036    0.0052    0.0069    0.0084    0.0099    0.0113
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    0.0000    0.0252    0.0500    0.0742    0.0979    0.1211    0.1438    0.1659 ...
     0         0         0         0         0         0         0         0
    0.0000   -0.0084   -0.0166   -0.0246   -0.0323   -0.0398   -0.0470   -0.0538
   -0.0000    0.0018    0.0036    0.0052    0.0069    0.0084    0.0099    0.0113
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     0         0         0         0         0         0         0         0
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    0.0000    0.0252    0.0500    0.0742    0.0979    0.1211    0.1438    0.1659 ...
     0         0         0         0         0         0         0         0
    0.0000   -0.0084   -0.0166   -0.0246   -0.0323   -0.0398   -0.0470   -0.0538
     0         0         0         0         0         0         0         0
    0.0000    0.0050    0.0099    0.0146    0.0191    0.0232    0.0270    0.0305

```

```

y4=lsim(B,A,sum(s),t);
plot(t,sum(y));grid;hold on
plot(t,y4,'r');legend('sum(y)','y4');

```

