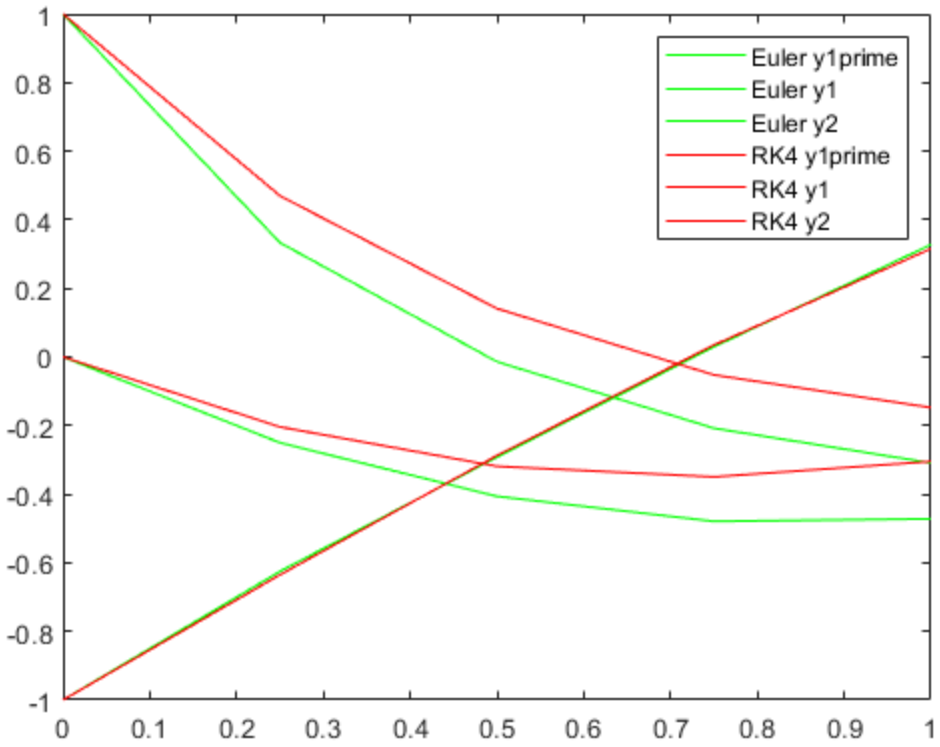
```
%y''-2y' + 2y = e2t sin t,0 ? t ? 1,
% with y(0) = ?0.4, y(0) = ?0.6
clc
clear all
y0=[0 -1 1];a=0;b=1;h=.25;
[t,y]=euler2(y0,a,b,h);
[t1,y1]=RK42(y0,a,b,h);
[t2,y2]=ode23(@f,[a b],y0);

%Solved_by_Euler=[t' y']

Solved_by_RK4=[t' y1']



plot(t,y,'g-',t,y1,'r')
legend('Euler y1prime','Euler y1','Euler y2','RK4 y1prime','RK4
 y1','RK4 y2')
```

```
k1 =

   -0.2500
    0.3750
   -0.6667


k2 =

   -0.2031
    0.3580
   -0.5069


k3 =

   -0.2052
    0.3732
   -0.5485


k4 =

   -0.1567
    0.3517
   -0.4036


k1 =

   -0.1588
    0.3570
   -0.4152
```

```
k2 =

   -0.1142
    0.3453
   -0.3165


k3 =

   -0.1156
    0.3528
   -0.3382


k4 =

   -0.0706
    0.3348
   -0.2475


k1 =

   -0.0718
    0.3376
   -0.2535


k2 =

   -0.0296
    0.3211
   -0.1869


k3 =

   -0.0317
    0.3252
   -0.1986


k4 =

    0.0095
    0.3027
   -0.1369


k1 =

    0.0087
```

```
    0.3041
   -0.1398


k2 =

    0.0468
    0.2801
   -0.0910


k3 =

    0.0438
    0.2830
   -0.0978


k4 =

    0.0795
    0.2543
   -0.0528


Solved_by_RK4 =

         0         0   -1.0000    1.0000
    0.2500   -0.2039   -0.6351    0.4698
    0.5000   -0.3187   -0.2872    0.1411
    0.7500   -0.3495    0.0350   -0.0524
    1.0000   -0.3046    0.3157   -0.1474
```



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