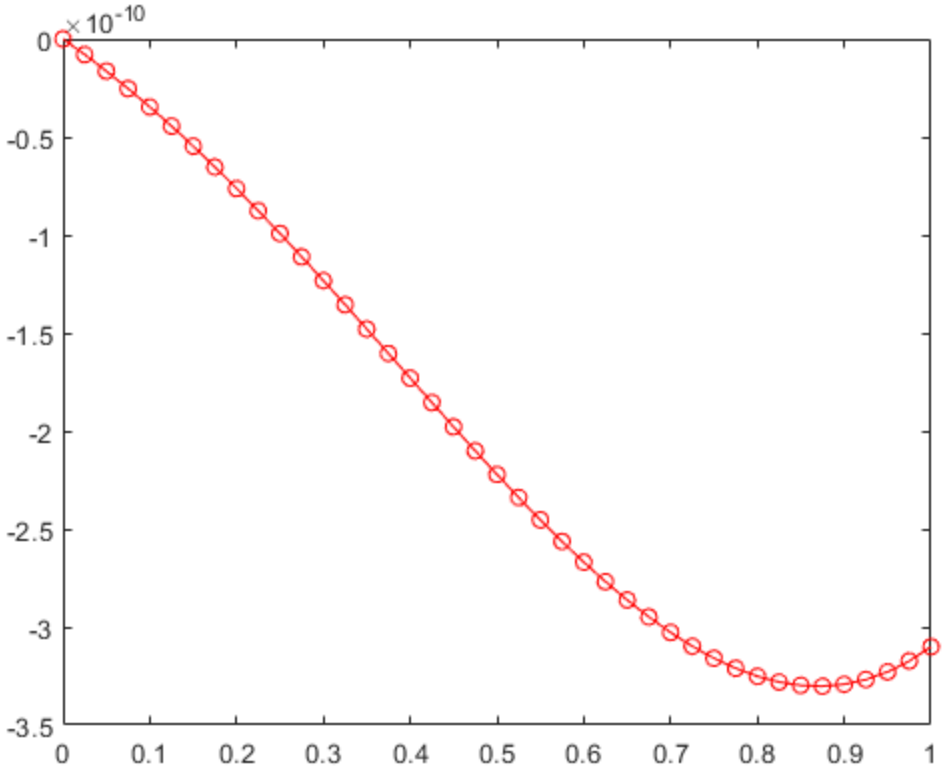
```
t0=0;
tf=1;
dt=0.025;
t=0:dt:1;
N=(tf-t0)/dt;
f=@(t,y) (y^2+2*t*y)/(3+t^2);
yExact=@(t) (3+t.^2)./(6-t);
y=zeros(1,N+1);
y(1)=1/2;

for n = 1:N
    k1=f(t(n),y(n));
    k2=f(t(n)+dt/2,y(n)+dt/2*k1);
    k3=f(t(n)+dt/2,y(n)+dt/2*k2);
    k4=f(t(n)+dt,y(n)+dt*k3);
    y(n+1)=y(n)+dt*(k1+2*k2+2*k3+k4)/6;
end
[tOde,yOde] = ode45(f,[0,1],1);
disp(yExact(t(1:10)))
disp(y(1:10))
p1 = plot(t,yExact(t)-y,'r-o');
```

```
  Columns 1 through 7

    0.5000    0.5022    0.5046    0.5073    0.5102    0.5133    0.5167

  Columns 8 through 10

    0.5203    0.5241    0.5282

  Columns 1 through 7

    0.5000    0.5022    0.5046    0.5073    0.5102    0.5133    0.5167

  Columns 8 through 10

    0.5203    0.5241    0.5282
```



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