

```
function dy=ex2(t,y)
dy = zeros(2,1); % a column vector
dy(1) = -4*y(1)-2*y(2)+cos(t)+4*sin(t);
dy(2) = 3*y(1)+y(2)-3*sin(t);

clear;
tspan=[0,2*pi];
ic=[0,-1];
opts=odeset('RelTol',1e-8,'AbsTol',[1e-4 1e-6]);
[t,y] = ode23(@ex2,tspan,ic,opts);
plot(t,y(:,1),'r-',t,y(:,2),'--')
grid
title('MatLab Solution')
xlabel('time t');
ylabel('solution y');
legend('y_1(t)', 'y_2(t)')
```

