```
function dy=ex3(t,y)
dy = zeros(2,1);    % a column vector
dy(1) = y(1)+y(2);
dy(2) = -y(1)+y(2);
```

```
% Solving autonomous system of equations and plotting its phase portrait.
clear;
[t,y] = ode45(@ex3,[0 2*pi],[1 0]);
subplot(2,1,1); plot(t,y(:,1),'-',t,y(:,2),'--')
grid
title('MatLab Solution')
xlabel('time t');
ylabel('solution y');
legend('y_1(t)','y_2(t)')
subplot(2,1,2); plot(y(:,1),y(:,2));
grid
title('Phase portrait')
xlabel('y_1');
ylabel('y_2');
```