

%Plot the approximation function

%初始化xi範圍，yi數值

xi = -10:2:10;

yi = -.03\*xi.^2 +.1\*xi + 2 + .5\*(rand(1,length(xi))-.5);

plot(xi,yi,'o'); %畫出原圖

hold on; %hold

xx = -10:.1:10; %初始化xx範圍

for ri = 1:3 %計算不同次方的近似圖，ri等於最高次方

m = [ones(1,size(xi,2));cumprod(repmat(xi,ri,1),1)]';

a= m\yi %m\*a = yi，m\yi等於係數a

mm= [ones(1,size(xx,2));cumprod(repmat(xx,ri,1),1)]';

yy=mm\*a; %mm\*a得出近似yy

plot(xx,yy); %畫出近似圖

end

hold off;