

Function to Output Mathematics Function Image

Bingcheng Guo

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Matlab code listing :

```
%return figure
%references : width and height of the figure
function figure = generateFigure(imgW,imgH)
    x = 0:pi/100:2*pi; %domain
    y1= sin(x);
    y2= cos(x);
    y3 = x.^2;

    set(gcf,'Position',[300 50 imgW imgH]);
    %set position and size of figure

    plot(x,y1,'r- ',x,y2,'g. ',x,y3,'b- ');
    axis([0,2*pi,-1,20]);
    %set range of independent and
    %dependent variables to print

    title('sin ,cos and x^2 curves ');
    xlabel('X');
    ylabel('Y');
    text(2.8,0.5,'sin(x) ');
    text(1.4,0.3,'cos(x) ');
    print(gcf,'-dpng','res.png');
    %print the figure to res.png

    figure = imread('res.png');
    %read the img and set the return value
```

Command window:

```
img = generateFigure(500,500);
imshow(img);
```

Image as follows:

