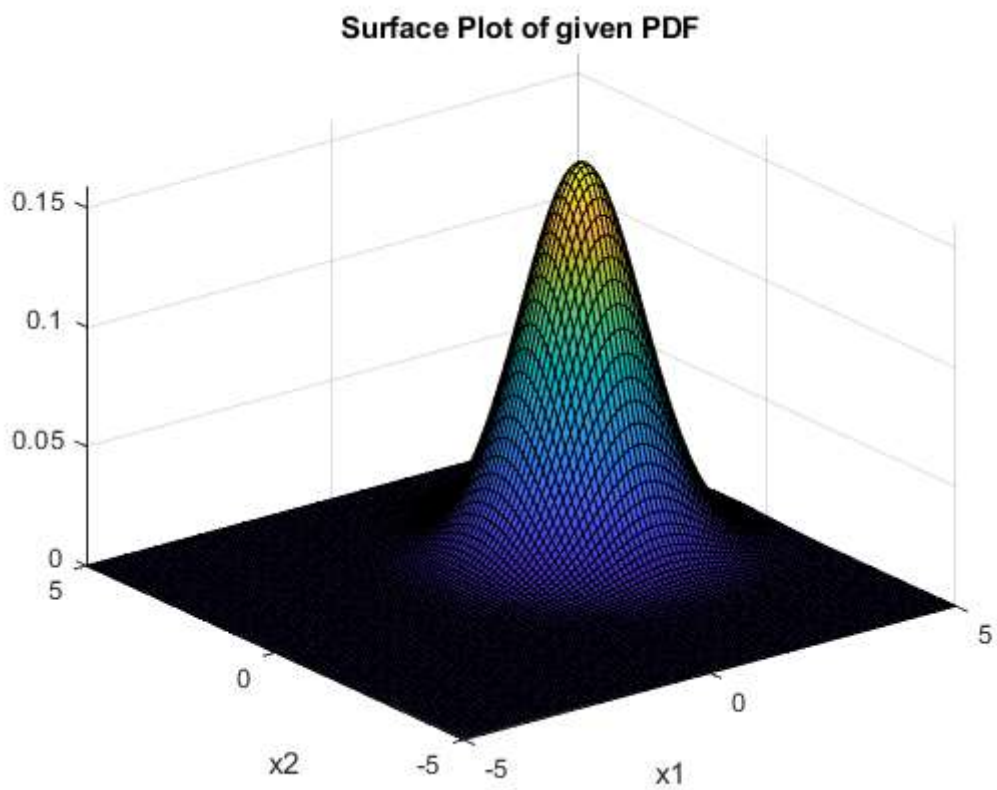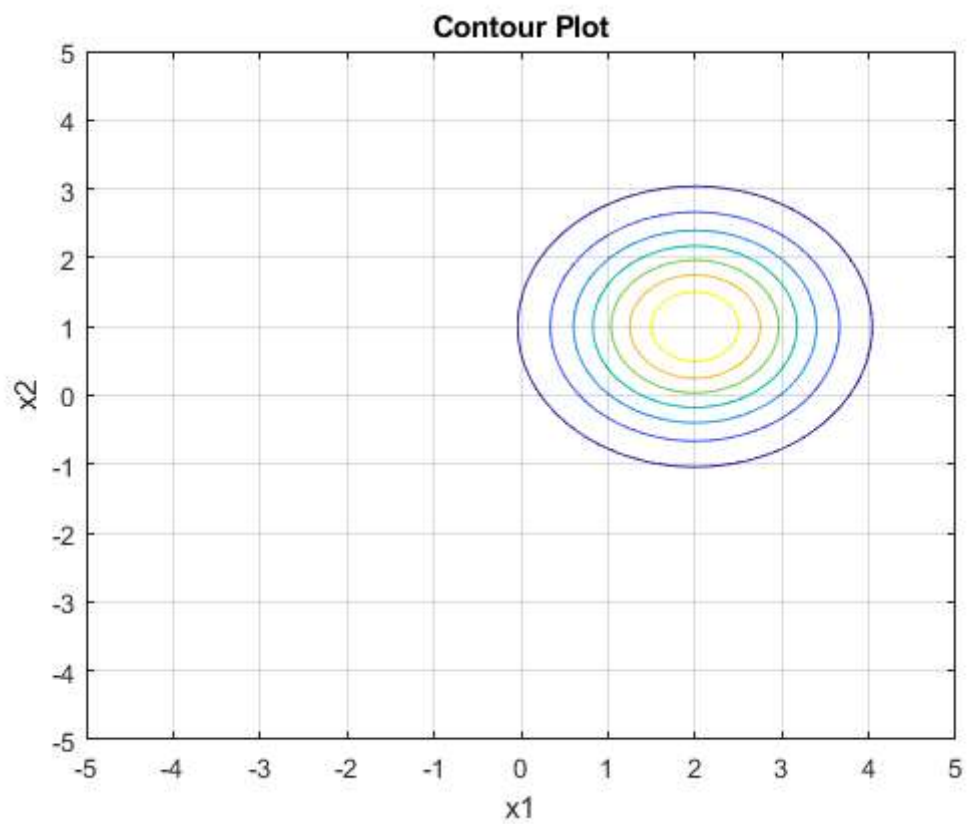```
clc; clear all; close all;
```

# Part A: mu=[2,1]', sigma=[1,0; 0,1]

```
mu=[2,1]';
[X1 , X2]=meshgrid(-5:0.1:5,-5:0.1:5);
rv=[X1(:) X2(:)]';
p=exp(-0.5*diag((rv-mu)' * (rv-mu)))*(1/(2*pi));
p=reshape(p,size(X1));

figure(1);
hold off;
contour(X1,X2,p);
title('Contour Plot');
xlabel('x1');
ylabel('x2');
grid on;

figure(2);
hold off;
surf(X1,X2,p);
title('Surface Plot of given PDF');
xlabel('x1');
ylabel('x2');
grid on;
```

Contour Plot

Surface Plot of given PDF

Part B: mu=[2,1]', sigma=[1,0.8; 0.8,1]

```matlab
mu=[2,1]';
sigma=[1,0.8;0.8,1];
[X1 , X2]=meshgrid(-5:0.1:5,-5:0.1:5);
rv=[X1(:) X2(:)]';
p=exp(-0.5*diag((rv-mu)' * inv(sigma) * (rv-mu)))*(1/(2*pi*sqrt(det(sigma))));
p=reshape(p,size(X1));

figure(3);
hold off;
contour(X1,X2,p);
title('Contour Plot');
xlabel('x1');
ylabel('x2');
grid on;

figure(4);
hold off;
surf(X1,X2,p);
title('Surface Plot of given PDF');
xlabel('x1');
ylabel('x2');
grid on;
```
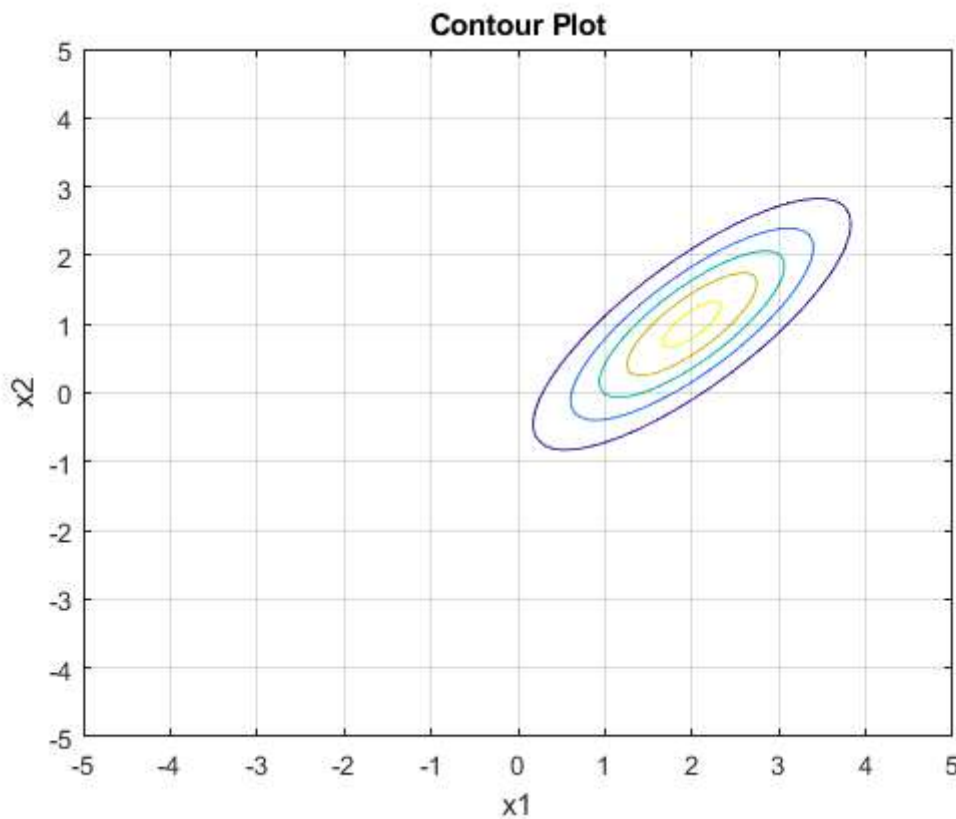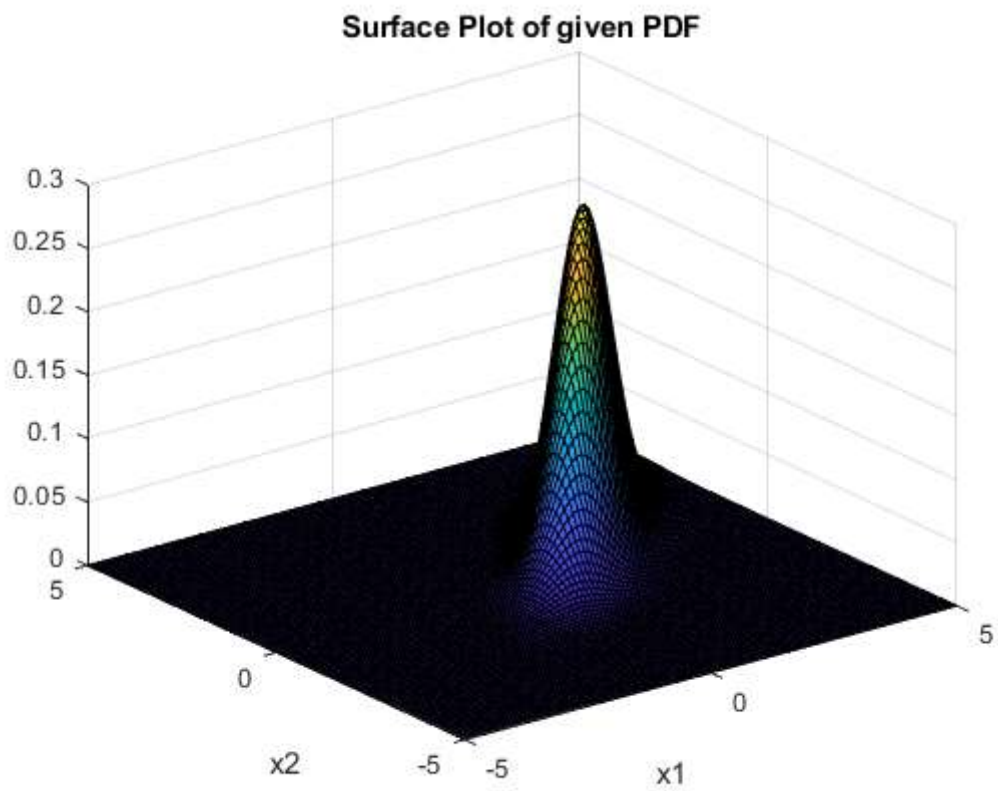
Surface Plot of given PDF

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