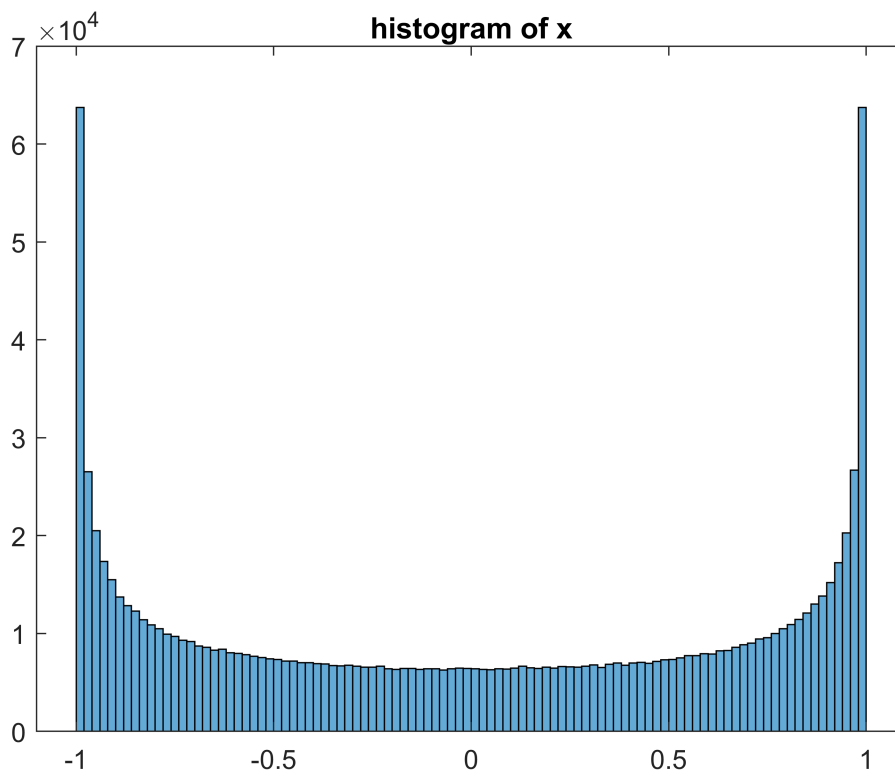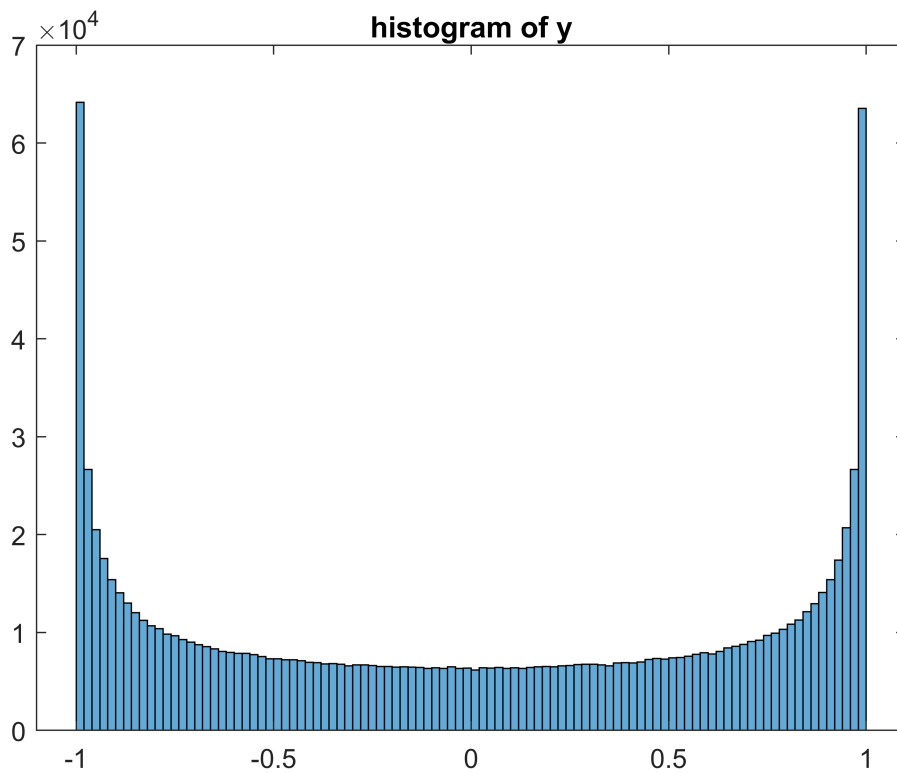```
t = randn(1000000,1)*pi;

x = sin(t);
y = sin(2*t);
```

**Histograms**

```
histogram(x);
title('histogram of x');
```



```
histogram(y);
title('histogram of y')
```
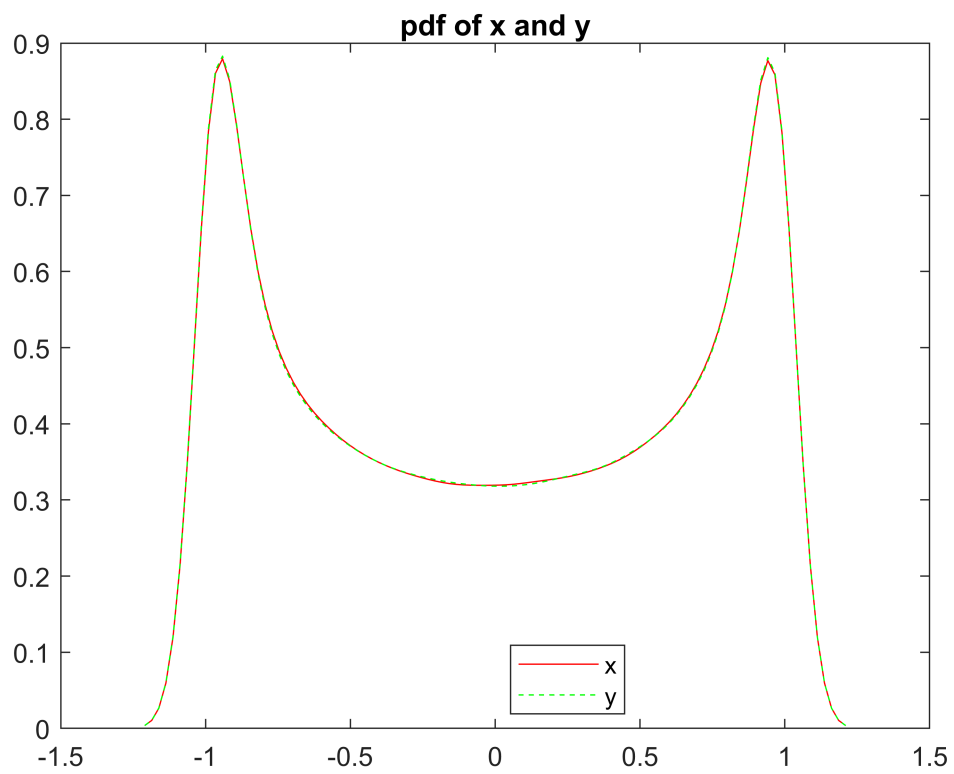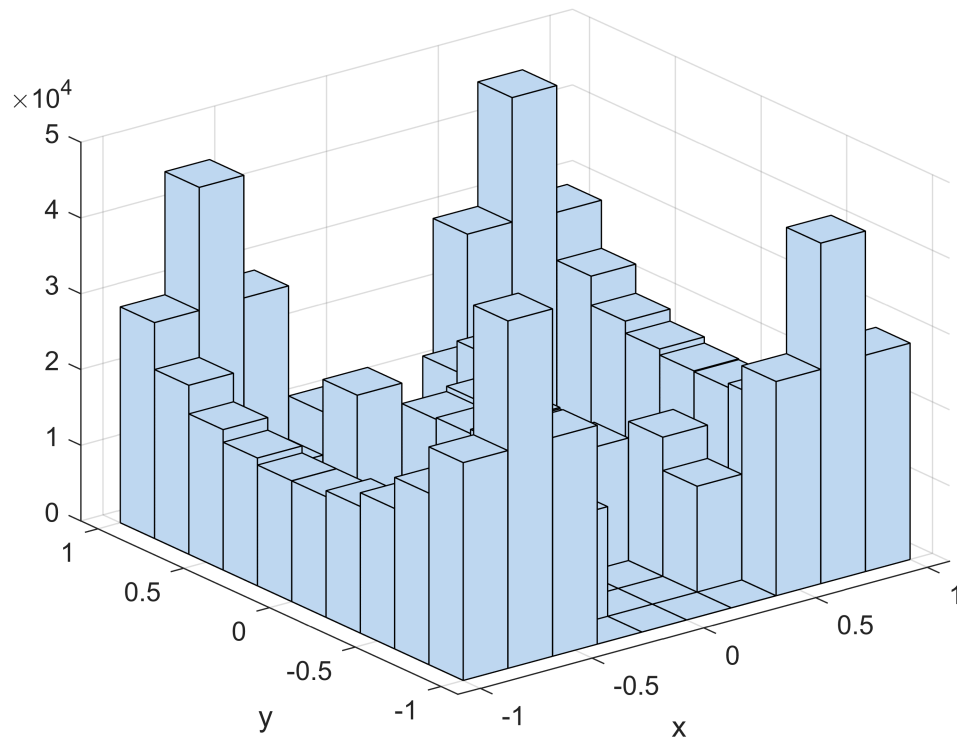
histogram of y

Probability density density

```
[f_x,xi] = ksdensity(x);
[f_y,yi] = ksdensity(y);

plot(xi, f_x, 'r', yi, f_y, '--g');
legend({'x', 'y'}, 'Location','best');
title('pdf of x and y');
```

pdf of x and y

Joint Histogram

```
hist3([x,y]);
xlabel('x');
ylabel('y');
```

Joint Probability function

```
ksdensity([x,y]);
title('Joint probability distribution');
```

Joint probability distribution