Contents


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

define the parameters of the Rayleigh distribution

```
sigma = 1.5; %Scale
```

Generate random samples from the Gaussian distribution

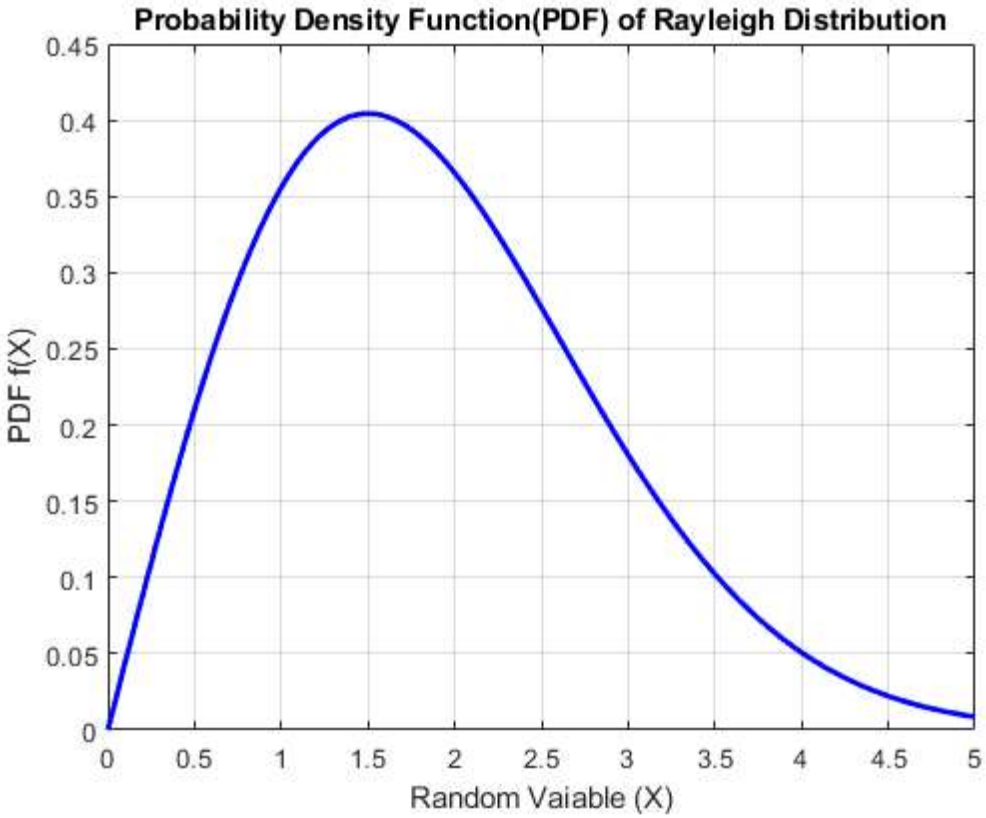
```
sample_size = 1000; % You can change this valuue to generate more or fewer examples
%random_samples = mu + sigma * randn(sample_size, 1);
```

Compute the PDF and CDF

```
%x = linspace(mu - 4*sigma, 1000); %Range of valuse for PDF and CDF
x = linspace(0, 5, 1000);
pdf_values = (x ./ (sigma^2)).* exp(-(x).^2 / (2*sigma^2));
cdf_values = 1 -  exp(-x.^2/(2*(sigma^2)));
```

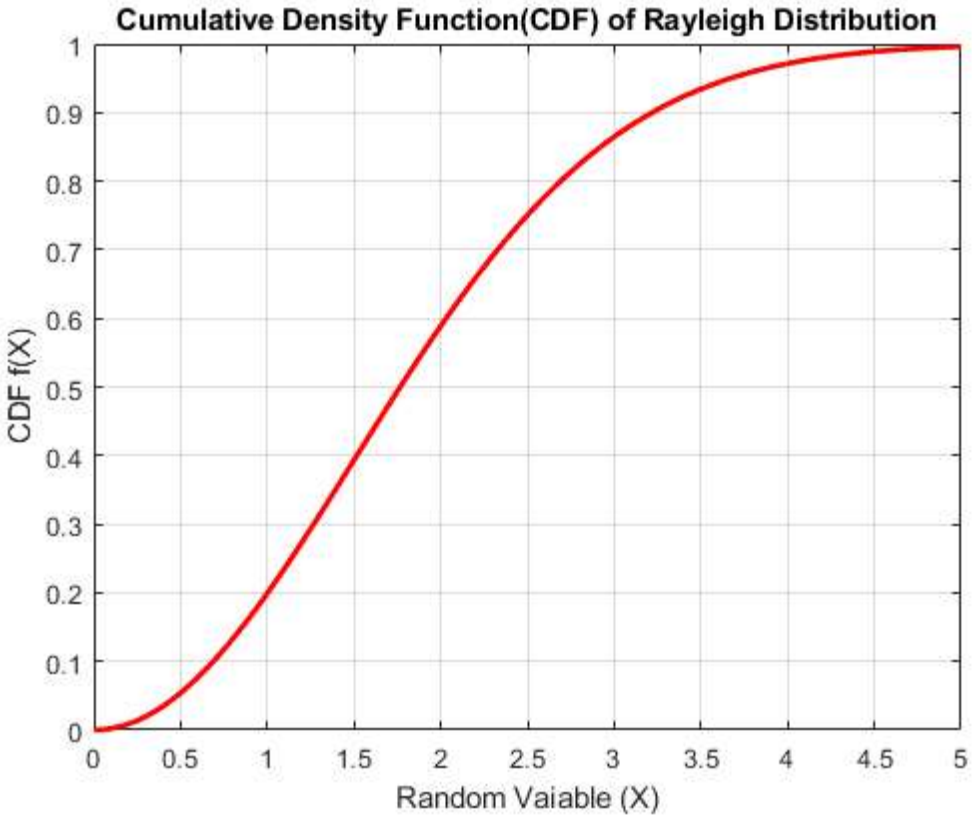
Plot the PDF

```
figure;
plot(x, pdf_values, 'b-', 'LineWidth', 2);
title('Probability Density Function(PDF) of Rayleigh Distribution');
xlabel('Random Vaiable (X)');
ylabel('PDF f(X)');
grid on;
```



Plot the CDF

```
figure;
plot(x, cdf_values, 'r-', 'Linewidth', 2);
title('Cumulative Density Function(CDF) of Rayleigh Distribution');
xlabel('Random Vaiable (X)');
ylabel('CDF f(X)');
grid on;
```



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