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

Define the parameters of the Gaussian distribution

```
mu = 0;      %mean  
sigma = 1.5; %Standard Deviation
```

Generate random samples from the Gaussian distribution

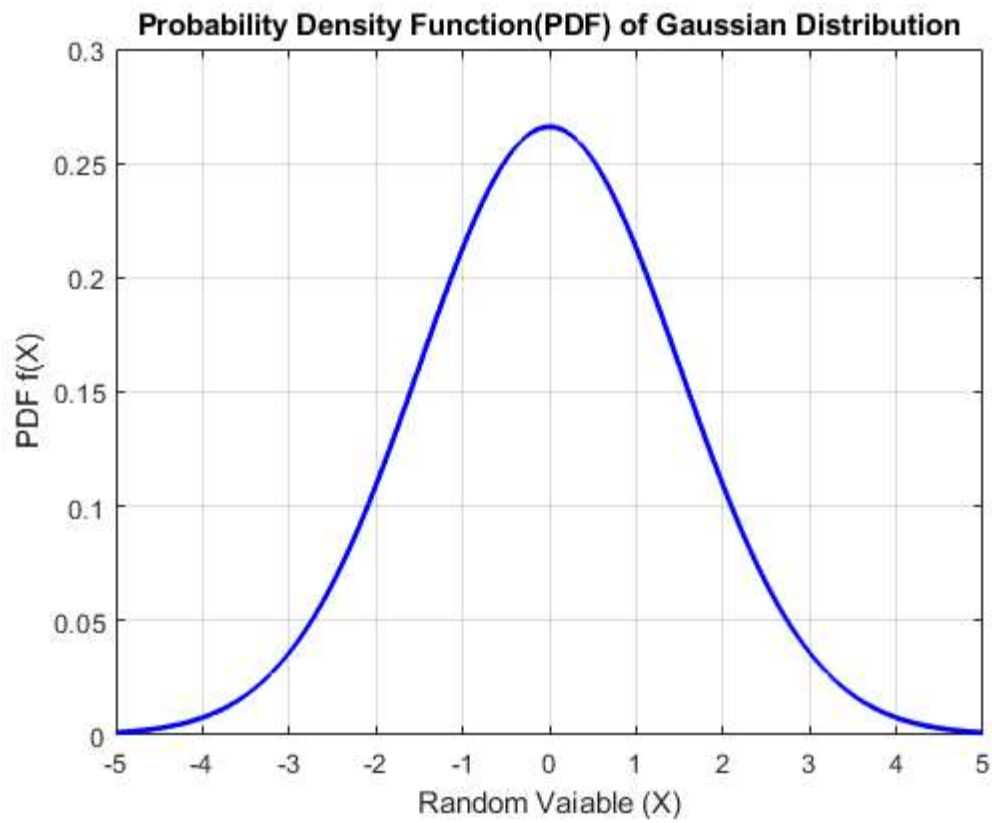
```
sample_size = 1000;  
random_samples = mu + sigma * randn(sample_size, 1);
```

Compute the PDF and CDF

```
%x = linspace(mu - 4*sigma, 1000); %Range of valuse for PDF and CDF  
x = linspace(-5, 5, 1000);  
pdf_values = (1/ (sigma * sqrt(2*pi))) * exp(-(x - mu).^2 / (2*sigma^2));  
cdf_values = 0.5 * (1 + erf((x - mu) / (sigma * sqrt(2))));
```

Plotting the PDF

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



Plotting the CDF

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

