Probability Distribution Functions

My Solutions >

Write a single MATLAB function called *calcProbs* which can do each of the following three tasks.

Note: A single function, with appropriate inputs and outputs as described in the questions below, is done each of the three parts below.

Part 1: Understanding of Basic Probability Concepts (20%)

Your function should be able to take in a probability density function called *pdf* and an interval *[a, b]* and falling within that interval.

Note: You should not define a specific pdf, but allow the function to work for an arbitrary pdf.

Part 2: Working with the Normal Distribution (40%)

Leaving the previous inputs and outputs for the previous part, add additional inputs to accept the parameters The function should plot, with x and y labels, the PDF of the distribution and update it to also return the value

`mean_val, one_std, two_std`

at which the normal PDF is at its mean, one standard deviation away, and two standard deviations away

Part 3: Application of Probability Distributions (40%)

Finally, update your function to take two further normal distribution parameters, *mu2* (mean) and *sigma2* (sta area of overlap between the two distributions.

Function

Save Reset MATLAB Documentation (https://www.mathworks.com/help/)

```
function [prob, mean_val, one_std, two_std, area] = calcProbs(pdf, a, b, mu1, sigma
    %
    % All of your code
    %
    %
end
```

Code to call your function

Reset

```
```

```
% You do not need to provide any code to run your function.
```

Run Function

Assessment:

Submit

Understanding of Basic Probability Concepts

Working with the Normal Distribution (I)

Working with the Normal Distribution (II)

Part 3: Application of Probability Distributions