Quiz\_Lecture27

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Find at least two more distributions, whose PDFs are log-concave, and prove your conclusion:

1, Exponential Distribution:

PDF:



When , 

:



So,  , its PDF is a log-concave function.

2, Logistic Distribution:

Since any logistic distribution can be transformed into the condition  by scaling and moving, we just need to show that  is a log-concave function.

PDF:





:



So, we just need to show that  is a convex function.



So,  is a convex function.

So, the PDF of Logistic Distribution is a log-concave function.