MIT Introduction to Statistics 18.05 Reading 6A Think Questions

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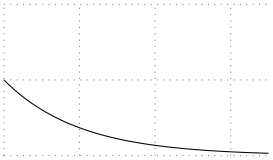
Contents

1 References and License

We are answering questions in the material from MIT OpenCourseWare course 18.05, Introduction to Probability and Statistics.
In this document we are answering questions Orloff and Bloom ask in [1].
Please see the references section for detailed citation information.

2 Why the median is not the mean

In [1] Orloff and Bloom give us the exponential distribution, and show that the median value of the exponential distribution $\exp(\lambda)$ is $\frac{\ln(2)}{\lambda}$
On the other hand, they also show that the mean value of $\exp(\lambda)$ is $\frac{1}{\lambda}$.
Orloff and Bloom then ask us why the mean value is not equal to the median value.
They give us a hint to look at a graph of the pdf of $\exp(\lambda)$.
Here is a graph of $\exp(\lambda)$:



References

[1] Jeremy Orloff and Jonathan Bloom. *Expectation, Variance and Standard Deviation for Continuous Random Variables Class 6, 18.05, Spring 2014 Jeremy Orloff and Jonathan Bloom.* Available at `https://ocw.mit.edu/courses/mathematics/18-05-introduction-to-probability-and-statistics-spring-2014/readings/MIT18_05S14_Reading6a.pdf` (Spring 2014).