

MIT Introduction to Statistics 18.05 Problem Set 2

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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] after writing the word, "Think," in bold face font.

Please see the references section for detailed citation information.

The material for the course is licensed under the terms at <http://ocw.mit.edu/terms>.

We use documentation in [2] to write L^AT_EXsource code for this document.

2 Total area under pdf

The first question Orloff and Bloom ask in [1] is, "What is the total area under the pdf $f(x)$?"

In [1], Orloff and Bloom state that it is a property of probability density functions f that

$$\int_{-\infty}^{\infty} f(x) dx = 1 \tag{1}$$

References

- [1] Jeremy Orloff and Jonathan Bloom. *Continuous Random Variables Class 5, 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_Reading5b.pdf (Spring 2014).
- [2] Sharelatex. *Integrals, sums and limits*. Available at https://www.sharelatex.com/learn/Integrals,_sums_and_limits (2017).