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## Overview

### AN EVENING IN CONTINUOPOLIS

Together, discrete and continuous approaches form a powerful framework for modeling the world.

As Bernie and Norma realized, discrete and continuous random variables have a lot in common *and* a lot of differences. Often, reasoning by analogy is helpful when going from discrete to continuous or vice versa, but the differences must also be kept in mind. It is important to become familiar both with *specific* famous distributions such as the [Bernoulli](#) and Normal, and with *general* techniques for working with distributions. This unit focuses on continuous distributions, introducing several that are especially widely used (and featured on the menu at The Random Fish).

### Learning Objectives

In this section, you will:

- Learn about continuous random variables and their distributions
- Explore the Uniform, Normal, and Exponential distributions
- Study the universality property of the Uniform distribution
- Remember the memoryless property of the Exponential distribution
- See how Poisson processes connect discrete and continuous perspectives, giving interpretations for both the Poisson and the Exponential in one picture

Take a bit of Continuopolis home with you!


Download The Random Fish menu as a [printable PDF file](#) or [PNG graphic](#). [Text Description](#) also available.



# MENU


**POISSON DU JOUR**

Fresh catch from Discretetown



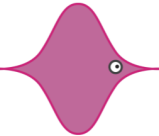
**NORMAL FISH**

Taste the symmetry




**CAUCHY FISH**

Succulent, heavy tail




**EXPO FISH**

So good, but we can't remember why



**UNIFORM FISH**

Uniformly tasty, universal appeal



**FISH SAMPLER**

Three fish, sampled without replacement

