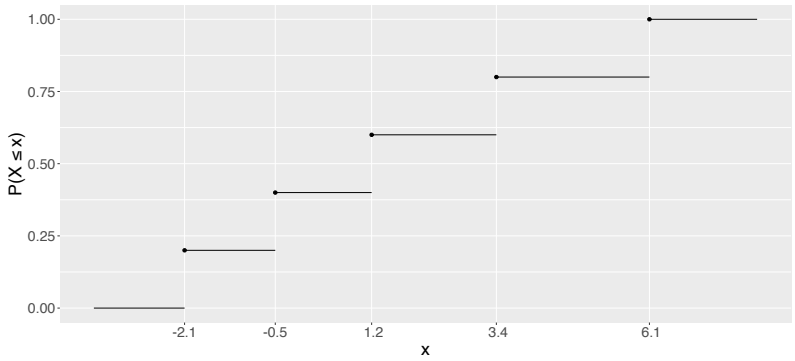
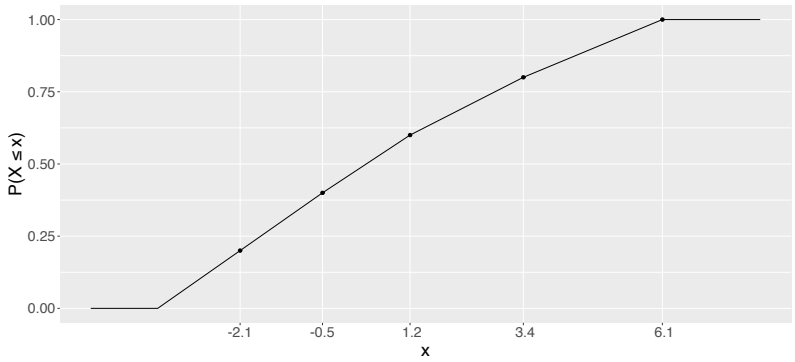


(a) Empirical CDF from sample



(b) Linear Interpolation of ECDF

Figure 3: Demonstration of Linear Interpolation from an empirical CDF. In a) a sample of $\{-2.1, -0.5, 1.2, 3.4, 6.1\}$ is used to construct the ECDF, which then is smoothed by linear interpolation in b). In practice, values after interpolation are truncated between [0.001, 0.999] to avoid infinities.

Appendix

In Figure 3, we demonstrate the process of generating a piece-wise linear function that estimates the CDF of a given data sample. In the example in the figure, we take the sample $S = \{-2.1, -0.5, 1.2, 3.4, 6.1\}$ and start by plotting the empirical CDF of this sample as the step function $a \mapsto \frac{1}{n} \sum_{s \in S} I(a \leq s)$. To perform linear interpolation of this step function, we simply build a piece-wise linear function connecting the jump points from the step function. After the last point, the function levels off at 1, while before the first point the function continues linearly down to 0 before leveling off. In practice, we take the additional step of truncating the function between 0.001 and 0.999 to avoid computing the inverse CDF of 0 or 1 during the following step when we convert from uniform to Gaussian distribution.