A recursively defined function is a function whose definition refers back to itself. A classic example of such a function is the factorial, \( n! = 1 \cdot 2 \cdot 3 \cdot \cdots \cdot n \) which can be defined recursively as follows: \( 0! = 1 \) \( n! = n \cdot (n-1)! \) for all \( n \in \mathbb{N} \). The Ackermann function. We could think of a recursively defined set as a population, and the set \( G \) as the initial population. The functions \( f \) could be thought of as rules of procreation. Then, the principle of structural induction says that if something is true about everyone in the initial population, and if every individual always passes it on to their direct descendants, then it is true about the entire population. Structural Induction Described Using a Population Metaphor. be jointly continuous random variables with joint PDF \( f(x,y) = \begin{cases} cx + 1 & \text{if } x,y \geq 0, x+y < 1 \\ 0 & \text{otherwise} \end{cases} \). Show the range of \( (X,Y) \). \( R_{XY} \) in the \( x-y \) plane. Find the constant \( c \). Find the marginal PDFs \( f_X(x) \).

4.3.1 Mixed Random Variables. 4.3.2 Using the Delta Function. 4.3.3 Solved Problems. 4.4 Problems. 4.4.0 End of Chapter Problems. 5 Joint Distributions. 5.1 Two Discrete Random Variables. 5.1.0 Two Random Variables. 14 Recursive Methods. Appendix. Some Important Distributions. Review of the Fourier Transform. Bibliography. Introduction to Probability by Hossein Pishro-Nik is licensed under a Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License. Publicationes Mathematicae Debrecen is currently in the process of establishing a free archive of past issues. Volumes 40(1992) - 79(2011) can already be freely downloaded. Hopefully in the not too distant future, the earlier volumes 1 - 39 will also be available. In memoriam: Lajos Tamassy. © 2003-2020, Publicationes Mathematicae, Debrecen, Hungary. Rózsa Péter's Playing with infinity, a book popularising mathematics (Péter 1944/1961). The workshop in question is part of a three-days teacher training we offer every year since 2012 to secondary teachers of the Parisian region; the teacher training itself is related to an interdisciplinary research project in history of sciences and to a working group for teachers. First I will present this complex project which offers the context of my workshop. Our actual project concerning the teaching of Pythagoras theorem is principally 9 Although acknowledged researcher in mathematics, Rózsa Péter didn't obtain any academic position until the end of the Second World War and therefore she worked in a middle-school. 10 For more details about the modelling, see (Gosztonyi, 2015b). "Über formal unentscheidbare Sätze der Principia Mathematica und verwandter Systeme I" ("On Formally Undecidable Propositions of Principia Mathematica and Related Systems I") is a paper in mathematical logic by Kurt Gödel. Dated November 17, 1930, it was originally published in German in the 1931 volume of Monatshefte für Mathematik. Several English translations have appeared in print, and the paper has been included in two collections of classic mathematical logic papers. The paper contains Gödel's