

# Chapter 3 Discrete Random Variable And Probability

Chapter 3 Discrete Random Variable Part 1 Chapter 3 Discrete Random Variables \u0026amp; Probability Distributions Discrete and continuous random variables | Probability and Statistics | Khan Academy **Probability with discrete random variable example | Random variables | AP Statistics | Khan Academy**

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7. Discrete Random Variables III Chapter 3 Discrete Random Variable Part 2 17- Discrete Random Variables, PMF, Independent Random Variables Discrete Random Variables Discrete Random Variables 2) Cumulative Distribution Function Discrete Random Variables Discrete Random Variables 1) Brief Intro Probability Distribution and Function 20-CDF for Discrete Random Variables Chapter 3 Discrete Random Variables & Probability ... Chapter 3 Discrete Random Variables - Korea University Chapter 3: Discrete Random Variables and Probability ... Chapter 3 Random Variables | Foundations of Statistics with R Chapter 3 Continuous Random Variables Chapter 3. Discrete Random Variables - Applied Mathematics Chapter 3 lecture notes.pdf - Chapter 3 DISCRETE RANDOM ... Chapter 3. Discrete Random Variables and Their Probability ... Chapter 3: Discrete Random Variables - Test Bank Chapter 3 Discrete Random Variable Chapter 3 Discrete Random Variables and Probability ... Chapter 3 Discrete Random Variables and Probability ... Chapter 3: Discrete Random Variable Chapter 3. Discrete Random Variables Chapter 3 - Discrete Random Variables and Probability ... Chapter 3 Chapter 3: Discrete Random Variables and Probability ... Chapter 3 Random Variables (Discrete Case)

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**Calculator - Discrete Random Variable - Probability Distribuion** FRM: Terms about distributions: PDF, PMF and CDF The Mean (expected value) of a Discrete Probability Distribution **Mean  $E(X)$  and Variance  $Var(X)$  for Continuous Random Variables** Finding The Probability of a Binomial Distribution Plus Mean \u0026amp; Standard Deviation

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Distributions Variance and standard deviation of a discrete random variable | AP Statistics | Khan Academy Discrete Random Variables (1 of 3: Expected value \u0026amp; median) Mean (expected value) of a discrete random variable | AP Statistics | Khan Academy Multivariate Random Variables (FRM Part 1 2020—Book 2—Chapter 4) **Visual Proof of Pythagoras' Theorem** Introduction to Calculus (1 of 2: Seeing the big picture) Understanding Random Variables - Probability Distributions 1 **Discrete Random Variables - Example Calculating a Cumulative Distribution Function (CDF) TI Calculator - Discrete Random Variable - Probability Distribtuion FRM: Terms about distributions: PDF, PMF and CDF The Mean (expected value) of a Discrete Probability Distribution Mean E(X) and Variance Var(X) for Continuous Random Variables** Finding The Probability of a Binomial Distribution Plus Mean \u0026amp; Standard Deviation

7. Discrete Random Variables III Chapter 3 Discrete Random Variable Part 2 17—Discrete Random Variables, PMF, Independent Random Variables Discrete Random Variables Discrete Random Variables 2) Cumulative Distribution Function *Discrete Random Variables* Discrete Random Variables 1) Brief Intro Probability Distribution and Function 20—CDF for Discrete Random Variables Chapter 3 Discrete Random Variable A discrete random variable is a variable which can only take-on a countable number of values ( finite or countably infinite) Example (Discrete Random Variable) Flipping a coin twice, the random variable Number of Heads ... Chapter 3 Discrete Random Variables and Probability Distributions ...Chapter 3 Discrete Random Variables and Probability ...3 Discrete Random Variable - Expected Value Definition (Mean of a Discrete Random Variable) The mean or expected value of a discrete random variable  $X$ , denoted as  $\mu$  or  $E(X)$ , is  $\mu = E(X) = \sum x \cdot f(x) = \sum x \cdot P(X = x)$  Example (Mean of a Discrete Random Variable) Consider the random variable  $X$  and associated probability mass function defined by  $P(X = 0) = 0.20$ ,  $P(X = 1) = 0.30$ , and  $P(X = 2) =$  The expected value of  $X$  or  $E(X)$  by the definition above is  $E(X) = 0 \cdot P(X = 0) + 1 \cdot P(X = 1) + 2 \cdot P(X = 2)$  ...Chapter 3 Discrete Random Variables and Probability ...Chapter 3: Discrete Random Variable. Chapter 3: Discrete Random Variable. Shiwen Shen. University of South Carolina. 2017 Summer. 1/63. Random Variable. IDe nition: A random variable is a function from a sample space  $S$  into the real numbers. We usually denote random variables with uppercase letters, e.g.  $X, Y$  ...Chapter 3: Discrete Random Variable Chapter 3. Discrete Random Variables. Review • Discrete random variable: A random variable that can only take finitely many or countably many possible values. • Distribution: Let  $\{x_1, x_2, \dots\}$  be the possible values of  $X$ . Let  $P(X = x_i) = p_i$ , where  $p_i \geq 0$  and  $\sum p_i = 1$ . Chapter 3. Discrete Random Variables Definition 3.2 Discrete Random Variable  $X$  is a discrete random variable if the range of  $X$  is a countable set  $\{x_1, x_2, \dots\}$ . Quiz 3.1 A student takes two courses. In each course, the student will earn either a B or a C. To calculate a grade point average (GPA), a B is worth 3 points and a C is worth 2 points. Chapter 3 Discrete Random Variables - Korea University Discrete random variables Definition A random variable that can only assume distinct values is said to be discrete. Usually these represent a count. A Bernoulli experiment provides a 0/1 response Bernoulli Binomial A binomial rv gives the number of successes in  $n$  independent, identical trials. Possible values are 0, 1 Geometric Chapter 3 - Discrete Random Variables and Probability ... • Discrete random variable: A random variable that can only take finitely many or countably many possible values. • Distribution: Let  $\{x_1, x_2, \dots\}$  be the possible values of  $X$ . Let  $P(X = x_i) = p_i$ , where  $p_i \geq 0$  and  $\sum p_i = 1$ . • Tabular form:  $x_i \quad x_1 \quad x_2 \quad \dots \quad p(x_i) \quad p_1 \quad p_2 \quad \dots$  Chapter 3. Discrete Random Variables - Applied

Mathematics The random variable  $X$  is the sum, i.e.,  $X((i, j)) = i + j$ . Note that the set  $S$  (the range of  $X$ ) can be chosen to be  $\{2, \dots, 12\}$ . Suppose now that all our probabilistic interest is in the value of  $X$ , rather than the outcome of 64 Chapter 3 the individual dice (this would be the case if we played snakes and ladders). Chapter 3 Random Variables (Discrete Case) Chapter 3 Discrete Random Variables & Probability Distributions. STUDY. Flashcards. Learn. Write. Spell. Test. PLAY. Match. Gravity. Created by. llundell. Key Concepts: Terms in this set (17) discrete random variables. A rv whose possible values either constitute a finite set or else can be listed in an infinite sequence in which there is a ... Chapter 3 Discrete Random Variables & Probability ... chapter 3: discrete random variables and probability distributions 2 on which  $X(\omega)$  is defined could be just about anything. Chapter 3: Discrete Random Variables and Probability ... Chapter 3. Discrete Random Variables and Their Probability Distributions. 2.11 De nition of random variable 3.1 De nition of a discrete random variable 3.2 Probability distribution of a discrete random variable 3.3 Expected value of a random variable or a function of a random variable 3.4-3.8 Well-known discrete probability distributions. Discrete uniform probability distribution Bernoulli probability distribution Binomial probability distribution Geometric probability distribution ... Chapter 3. Discrete Random Variables and Their Probability ... 3.1 Discrete random variables. A discrete random variable is a random variable that takes integer values 5. A discrete random variable is characterized by its probability mass function (pmf). The pmf  $f(x)$  of a random variable  $X$  is given by  $f(x) = P(X = x)$ . The pmf may be given in table form or as an equation. Knowing the probability mass function determines the discrete random variable ... Chapter 3 Random Variables | Foundations of Statistics with R Study Chapter 3: Discrete Random Variables and Probability Distributions flashcards from Brian Nam's Columbia University class online, or in Brainscape's iPhone or Android app. Learn faster with spaced repetition. Chapter 3: Discrete Random Variables and Probability ... 74 Chapter 3. Continuous Random Variables (LECTURE NOTES 5) 1. Number of visits,  $X$  is a (i) discrete (ii) continuous random variable, and duration of visit,  $Y$  is a (i) discrete (ii) continuous random variable. 2. Discrete (a)  $P(X = 2) = 0$  (ii)  $0.25$  (iii)  $0.50$  (iv)  $0.75$  (b)  $P(X \leq 1) = P(X = 1) = F(1) = 0.25 + 0.50 = 0.75$  Chapter 3 Continuous Random Variables Chapter 3: Discrete Random Variables 3.1 The Notion of a Random Variable 3.1 © 2008 Pearson Education, Inc., Upper Saddle River, NJ. Chapter 3: Discrete Random Variables - Test Bank Chapter 3 Discrete Random Variables "When you flip a coin, there is a very small but finite chance you will never ever see that coin again." - Scott Edward Shjefte Chapter 3 Chapter 3: DISCRETE RANDOM VARIABLES AND PROBABILITY DISTRIBUTIONS 3.1. Random Variables For a given sample space  $S$  of some experiment, a random variable is any rule that associates a number with each outcome in  $S$ , i.e. a real-valued function that maps the sample space onto the real Chapter 3 lecture notes.pdf - Chapter 3 DISCRETE RANDOM ... Two Types of Random Variables ; Discrete Random Variable (Chap. 3) A discrete random variable is an rv whose possible values either constitute a finite set or else can be listed in an infinite sequence in which there is a first element, a second element, and so on. Continuous Random Variable (Chap. 4) A random variable is continuous if its set of Chapter 3. Discrete Random Variables and Their Probability Distributions. 2.11 De nition of random variable 3.1 De nition of a discrete random variable 3.2 Probability distribution of a discrete random variable 3.3 Expected value of a random variable or a function of a random variable 3.4-3.8 Well-known discrete probability distributions. Discrete uniform probability distribution Bernoulli probability distribution Binomial probability

distribution Geometric probability distribution ...

### Chapter 3 Discrete Random Variables & Probability ...

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Discrete random variables Definition A random variable that can only assume distinct values is said to be discrete. Usually these represent a count. A Bernoulli experiment provides a 0/1 response Bernoulli Binomial A binomial rv gives the number of successes in  $n$ . independent, identical trials. Possible values are 0, 1 Geometric

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3 Discrete Random Variable - Expected Value Definition (Mean of a Discrete Random Variable) The mean or expected value of a discrete random variable  $X$ , denoted as  $\mu$  or  $E(X)$ , is  $\mu = E(X) = \sum x \cdot f(x) = \sum x \cdot P(X = x)$  Example (Mean of a Discrete Random Variable) Consider the random variable  $X$  and associated probability mass function defined by  $P(X = 0) = 0.20$ ,  $P(X = 1) = 0.30$ , and  $P(X = 2) =$  The expected value of  $X$  or  $E(X)$  by the definition above is  $E(X) = 0 \cdot P(X = 0) + 1 \cdot P(X = 1) + 2 \cdot P(X = 2) = 0 \cdot 0.20 + 1 \cdot 0.30 + 2 \cdot 0.50 = 1.30$

### Chapter 3 Continuous Random Variables

Chapter 3: DISCRETE RANDOM VARIABLES AND PROBABILITY DISTRIBUTIONS 3.1. Random Variables For a given sample space  $S$  of some experiment, a random variable is any rule that associates a number with each outcome in  $S$ , i.e. a real-valued function that maps the sample space onto the real

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3.1 Discrete random variables. A discrete random variable is a random variable that takes integer values 5. A discrete random variable is characterized by its probability mass function (pmf). The pmf  $f(x)$  of a random variable  $X$  is given by  $f(x) = P(X = x)$ . The pmf may be given in table form or as an equation. Knowing the probability mass function determines the discrete random variable ...

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Definition 3.2 Discrete Random Variable  $X$  is a discrete random variable if the range of  $X$  is a countable set  $\{X_1, X_2, \dots\}$ . Quiz 3.1 A student takes two courses. In each course, the student will earn either a B or a C. To calculate a grade point average (GPA), a B is worth 3 points and a C is worth 2 points.

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A discrete random variable is a variable which can only take on a countable number of values (finite or countably infinite) Example (Discrete Random Variable) Flipping a coin twice, the random variable Number of Heads ... Chapter 3 Discrete Random Variables and Probability Distributions ...

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74 Chapter 3. Continuous Random Variables (LECTURE NOTES 5) 1. Number of visits,  $X$  is (i) discrete (ii) continuous random variable, and duration of visit,  $Y$  is (i) discrete (ii) continuous random variable. 2. Discrete (a)  $P(X = 2) =$  (i) 0 (ii) 0.25 (iii) 0.50 (iv) 0.75 (b)  $P(X \leq 5) = P(X \leq 1) = F(1) = 0.25 + 0.50 = 0.75$

### Chapter 3 Discrete Random Variables and Probability ...

Two Types of Random Variables ; Discrete Random Variable (Chap. 3) A discrete random variable is an rv whose possible

values either constitute a finite set or else can be listed in an infinite sequence in which there is a first element, a second element, and so on. Continuous Random Variable (Chap. 4) A random variable is continuous if its set of

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Chapter 3: Discrete Random Variable. Chapter 3: Discrete Random Variable. Shiwen Shen. University of South Carolina.

2017 Summer. 1/63. Random Variable. Definition: A random variable is a function from a sample space  $S$  into the real numbers. We usually denote random variables with uppercase letters, e.g.  $X, Y$  ...

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• Discrete random variable: A random variable that can only take finitely many or countably many possible values. • Distribution: Let  $\{x_1, x_2, \dots\}$  be the possible values of  $X$ . Let  $P(X = x_i) = p_i$ , where  $p_i \geq 0$  and  $\sum p_i = 1$ . • Tabular form:  $x_1 \ x_2 \ \dots \ p(x_1) \ p_1 \ p_2 \ \dots$

[Chapter 3](#)

chapter 3: discrete random variables and probability distributions 2 on which  $X(\omega)$  is defined could be just about anything.

### Chapter 3: Discrete Random Variables and Probability ...

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Introduction to Calculus (1 of 2: Seeing the big picture)

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*Terms about distributions: PDF, PMF and CDF The Mean (expected value) of a Discrete Probability Distribution* **Mean  $E(X)$  and Variance  $Var(X)$  for Continuous Random Variables** Finding The Probability of a Binomial Distribution Plus Mean \u0026amp; Standard Deviation

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Distribution and Function 20-CDF for Discrete Random Variables

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the possible values of  $X$ . Let  $P(X = x_i) = p_i$ , where  $p_i \geq 0$  and  $\sum p_i = 1$ . Chapter 3 Discrete Random Variables “When you flip a coin, there is a very small but finite chance you will never ever see that coin again.” - Scott Edward Shjefte