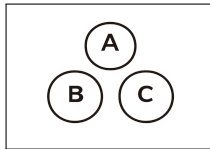


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Discrete Distribution Introduction

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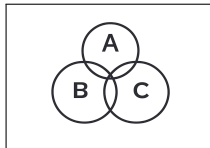


$$A = \{1, 2\} = \{n \mid n = 1, 2\}$$

$$B = \{1, 2, 3\} = \{n \mid n = 1, 2, 3\}$$

$$C = \{1, 2, 3, 4\} = \{n \mid n = 1, 2, 3, 4\}$$

$$X = \{1, 2, 3, \dots, n\} = \{n \mid n = 1, 2, 3, \dots, n\}$$



$$\mathcal{P}(A) = \{\{\emptyset\}, \{1\}, \{2\}, \{1, 2\}\}$$

$$\mathcal{P}(B) = \{\{\emptyset\}, \{1\}, \{2\}, \{3\}, \{1, 2\}, \{1, 3\}, \{2, 3\}, \{1, 2, 3\}\}$$

$$\mathcal{P}(C) = \{\emptyset, \{1\}, \{2\}, \{3\}, \{4\}, \{1, 2\}, \{1, 3\}, \{1, 4\},$$

$$\{2, 3\}, \{2, 4\}, \{3, 4\}, \{1, 2, 3\}, \{1, 2, 4\}, \{1, 3, 4\}, \{2, 3, 4\}, \{1, 2, 3, 4\}\}$$

$$|\mathcal{P}(X)| = 2^n$$



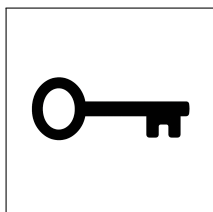
$$|\mathcal{P}(Z)| = 32$$

$$|Z| = ?$$

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Discrete Distribution Introduction

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$$|\mathcal{P}(Z)| = 32$$

$$|Z| = \log_2(32) = 5$$