

Theoretical Statistics: Topics for a Core Course

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Preface

This note contains the solution of the exercises in the textbook, *Theoretical Statistics: Topics for a Core Course*, and it was created by Hyunsung Kim, who is a Ph.D. student. I wrote it when I study a theoretical statistics based on this textbook on my own by solving some exercises and also referred to the solution manual in the textbook.

It contains a few selected exercises in the textbook what I studied, and also note that it may not be the exact solutions. If you want to refer to this note, you should study with doubt about the answer.

Textbook

- *Theoretical Statistics: Topics for a Core Course*, Robert W. Keener.

Chapter 1

Math symbol test

1.1 Theorem symbol

Theorem 1.1.1 (Pythagorean theorem). *This is a theorem about right triangles and can be summarised in the next equation*

$$x^2 + y^2 = z^2$$

Proof. dkdkd

□

And a consequence of theorem 1.1.1 is the statement in the next corollary.

Corollary 1.1.2. *There's no right rectangle whose sides measure 3cm, 4cm, and 6cm.*

You can reference theorems such as 1.1.1 when a label is assigned.

Proposition 1.1.3 (Consistnecy). *ddfafa*

Lemma 1.1.4. *Given two line segments whose lengths are a and b respectively there is a real number r such that $b = ra$.*

Remark 1.1.5. *This statement is true, I guess.*

Definition 1.1.6 (Fibration). *A fibration is a mapping between two topological spaces that has the homotopy lifting property for every space X .*

Example 1.1.7 (Continuous prob). This statement is true, I guess.

Chapter 2

Probability and Measure

2.1 Basic measure theory