Stockholm University
Department of Statistics
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Theory and Methodology of Statistical Science

WRITTEN EXAMINATION

Tuesday August 15, 2023

Allowed tools: Calculator.
There are eight questions each worth 5 points.

For the maximum number of points on each problem detailed, well motivated and clear solutions are required.

1.
Explain the concept of falsifiability and give an example used in an empirical study.

2.
Discuss shortly the concept of scientific knowledge using criteria brought up in the course.

3.
What is a Dutch book? Give an example.

4.
Discuss shortly the difference between rationalism and empiricism.

5.
Explain causality in terms of David Hume's definition. Limitations?

6.
Explain the concept of confounding variables. Give an example of what trouble these can cause in an empirical study.

7.
Explain Occam's principle. Give an example.

8.
Explain what is meant by an identified statistical model and give examples of an identified and a not identified model, respectively, that is, one of each type.