

程序代写代做 CS编程辅导



University of Canterbury

Mid-year Examinations 2016

WeChat: cstutorcs

Prescription Number(s): STAT317-1651 / ECON323-1651

Paper Title: Time Series Methods

Email: [tutorcs@163.com](mailto:tutorcs@163.com)

QQ: 749389476

Time Allowed: 2 hours

Number of Pages: 3  
<https://tutorcs.com>

Instructions for candidate:

- This is a restricted examination
- Only stickered calculators permitted
- Remember to write your name and student number on all answer booklets/pages
- Start each question on a new page
- All questions are equally worth
- Show all working

# 程序代写代做 CS编程辅导



WeChat: cstutorcs

QUESTIONS START ON PAGE 3

Assignment Project Exam Help

Email: [tutorcs@163.com](mailto:tutorcs@163.com)

QQ: 749389476

<https://tutorcs.com>

**QUESTION 1**

What are the invertibility and stationarity conditions for an ARMA process?  
Explain the reasons and the importance for such conditions.

**QUESTION 2**

Given the moving average process  

$$x_t = z_t - 0.7 z_{t-1} + 0.4 z_{t-2} \quad (0, \sigma^2),$$
 Find the values of the autocorrelation function for  $k=1,2,3$ .

**QUESTION 3**

Identify the order of the following ARMA( $p, q$ ) models and determine whether they are causal and/or invertible:

a)  $x_t = 0.8 x_{t-1} - 0.15 x_{t-2} + z_t - 0.3 z_{t-1};$

b)  $x_t = x_{t-1} - 0.5 x_{t-2} + z_t - 0.5 z_{t-1};$

where  $z_t \sim N(0, \sigma^2)$ . Please show all your workings.

**QUESTION 4**

Illustrate the major steps of the classical decomposition of a time series.

**QUESTION 5**

Explain why differencing a time series you remove a deterministic trend and why you should not difference more than twice.

**QUESTION 6**

Show that an invertible MA( $k$ ) model for any integer value of  $k$  is equivalent to an AR of infinite order and that a causal AR( $k$ ) model for any integer value of  $k$  is equivalent to a MA of infinite order.

**END OF PAPER**