

# R University

Statistics Exam 2015-01-01

Exam ID 00001

Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

Signature: \_\_\_\_\_

1.       .

2. (a)  (b)  (c)  (d)  (e)

3. (a)  (b)  (c)  (d)  (e)

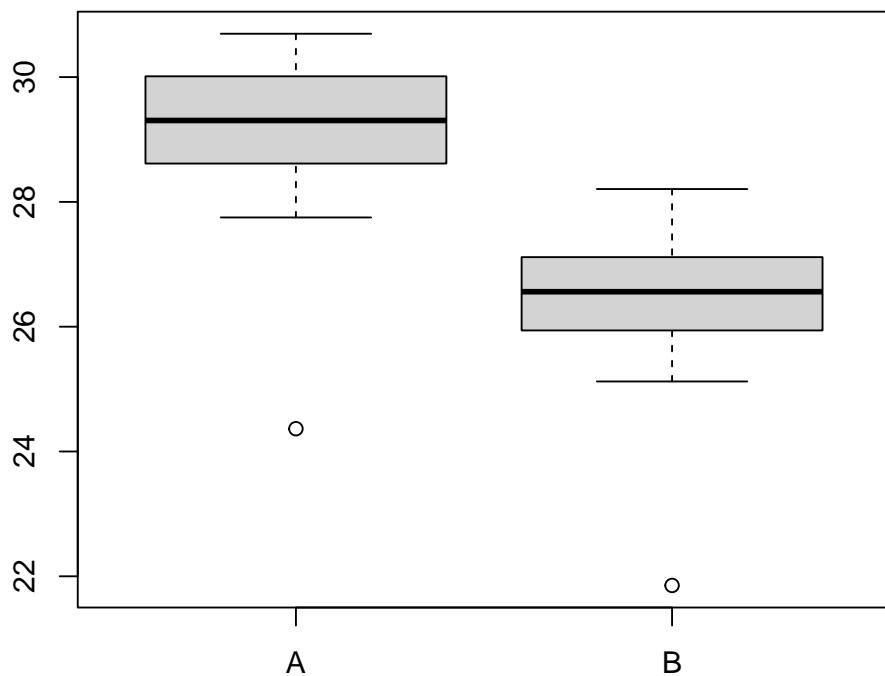
4.

5. (a) (a)  (b)  (c)

(b)       .

1. What is the derivative of  $f(x) = x^3 e^{3.1x}$ , evaluated at  $x = 0.69$ ?
2. What is the seat of the federal authorities in Switzerland (i.e., the de facto capital)?
  - (a) Basel
  - (b) Lausanne
  - (c) Geneva
  - (d) Zurich
  - (e) Bern
3. In the following figure the distributions of a variable given by two samples (A and B) are represented by parallel boxplots. Which of the following statements are correct? (*Comment: The statements are either about correct or clearly wrong.*)
 

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- (a) The location of both distributions is about the same.
- (b) Both distributions contain no outliers.
- (c) The spread in sample A is clearly bigger than in B.
- (d) The skewness of both samples is similar.
- (e) Distribution B is left-skewed.
4. What is the name of the R function for extracting the estimated covariance matrix from a fitted (generalized) linear model object?
5. Using the data provided in `regression.csv` estimate a linear regression of  $y$  on  $x$  and answer the following questions.
  - (a)  $x$  and  $y$  are not significantly correlated /  $y$  increases significantly with  $x$  /  $y$  decreases significantly with  $x$
  - (b) Estimated slope with respect to  $x$ :