**MODERN COLLEGE OF ARTS,SCIENCE & COMMERCE PUNE-05.**

**(Autonomous)**

**DEPARTMENT OF STATISTICS.**

**M.Sc.( I )**

ST-15

**EXPT.NO. 15**

**Title : Jacknife and bootstrap estimator**

1. Obtain the Jack knife estimator of population correlation coefficient given the following sample

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **24** | **26** | **32** | **36** | **43** | **52** | **62** | **56** | **52** | **21** |
| **22** | **28** | **25** | **18** | **14** | **14** | **8** | **8** | **10** | **24** |

Also estimate the bias and standard error of the estimator

2. Obtain the estimator of coefficient of symmetry based on moments using boot strap method given the following sample

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| **Xi** | **22** | **26** | **58** | **54** | **30** | **35** | **12** | **28** |

Also estimate the bias and standard error of the estimator.

3. A contractor has kept the data regarding a delay of his work and the penalty which he had

to pay on 6 of his earlier project obtain the estimator of mean delay time and mean penalty

using (i) boot strap method

(ii) Jack knife method

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Project No.** | **1** | **2** | **3** | **4** | **5** | **6** |
| **Delay time in months** | **32** | **4** | **16** | **7** | **12** | **27** |
| **Penalty in thousand Rs** | **2300** | **30** | **1500** | **150** | **700** | **1800** |

Also estimate the bias and standard error of the estimator

