Aalto University School of Electrical Engineering
Department of Communications and Networking
S-38.3184 Network traffic measurements and analysis IV/2012

Exam 18.5.2012
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1. Explain the following terms and discuss their roles in network measurements: (6 p)
   a) Scatterplot
   b) Time plot
   c) Outlier
   d) Experimental design
   e) Zipf's Law
   f) Self-similarity
2. Estimation: (6 p)
   a) What does it mean when an estimator is unbiased?
   b) Describe the method of moments.
   c) Describe the maximum likelihood (ML) method.
3. Explain the difference between active and passive network measurements. Which one is more suitable for: (6 p)
   a) Verifying that SLA targets are met for throughput-critical application
   b) Studying if peer-to-peer applications are being used
   c) Estimating network performance for VoIP applications
4. How one can characterize network delay distributions? How these can be measured? What are the most important factors to consider when determining accuracy and errors of measurements? (6 p)
5. What kind of measurement needs there are for (6 p)
   a) Network operator
   b) "Cloud" service provider (Infrastructure-as-a-service)
   c) Customer relationship management system (CRM) service provider
   d) Network user