14.381 Problem Set 7
Statistics Fall, 2004

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Due Monday November 8, 6:00pm (in E52-204).

1. C&B 5.29
2. C&B 5.32
3. Find the method of moments estimator of the following parameters:
   (a) λ for the case of an exponential distribution: $f(x|\theta) = \frac{1}{\lambda}\exp(-x/\lambda), \qquad 0 \leq x < \infty, \lambda > 0;$
   (b) σ for $N(\mu, \sigma^2)$ when μ is known;
   (c) θ if the pdf is $f(x|\theta) = \theta x^{-2}, \qquad 0 < \theta \leq x < \infty.$

   Hint: "the methods of moment estimator doesn't exist" is a plausible answer.

   For extra credit: if you answer that the method of moments estimator does not exist, can you provide an alternative expectation, $E(g(X))$, you can use to estimate the parameter of interest?