Econometrics I, quiz 5

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1. This is a 10-minute quiz

2. At **NO** point in the exam can you discuss the questions/answers with any of your colleagues.

3. When a multiple choice is present, circle the number indicating your choice of the answer.

4. Good luck. :-)

- **Q1 (10 points)**: The exponential family of distributions has a pdf, $f(x)$ as follows:

$$f(x|\alpha) = \begin{array}{ll} \alpha e^{-\alpha x} & x \geq 0 \\ 0 & x < 0 \end{array}$$

1. What are the parameters to be estimated?

2. Work out neatly the equation for the MLE estimates. (Hint: Includes writing the L, log(L), ...)

3. What is the asymptotic distribution of the MLE estimates? (Hint: It should be written in the form,
$$\sqrt{n}(\hat{\theta} - \theta) \sim D(\mu, \sigma^2)$$
where you use the correct name of the probability density function "D", μ, and σ^2.)