

## Quiz 3 - Process vs. Observation Error

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My name is: \_\_\_\_\_

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1. If you have a time-series of population counts to which you'd like to fit a geometric growth model, and the primary source of variation from the expected growth rate on any given year is observer error, then you can fit a regression of:
  - (a)  $\log(N_t/N_{t+1})$  vs.  $N$
  - (b)  $N_t$  vs.  $\lambda$
  - (c) It is impossible to estimate the growth rate with observer error.
  - (d)  $\log(N_t)$  vs. time
  - (e)  $\lambda$  vs.  $\log(N_t)$
2. If you have a data set of annual growth estimates for a population where there is substantial process error, then a good estimate for the variance due to process error would be?
  - (a) Residual variance from a model fit of  $\log(N_{t+1}/N_t)$  vs.  $N_t$
  - (b) The standard deviation of  $N_t$
  - (c) The standard deviation of  $N_{t+1} - N_t$
  - (d) Residual variance from a model fit of  $\log(N_t)$  vs. time
  - (e)  $\frac{1}{T} \sum_{t=1}^T (N_{t+1} - N_t)$