

Welcome!

Name:

Department and year:

Preferred pronouns:

What questions in your field are most exciting to you right now?

What statistical programming software do you use (list all with primary first)?

What do you hope to learn this semester?

Don't put your name on this.

1. $\ln(xy) =$

- a. $\ln(x) * \ln(y)$
- b. $\ln(x) / \ln(y)$
- c. $\ln(x) + \ln(y)$
- d. $\ln(x) - \ln(y)$

A

| | |
|---|---|
| 1 | 2 |
| 4 | 2 |

B

| | |
|---|---|
| 1 | 6 |
| 3 | 1 |

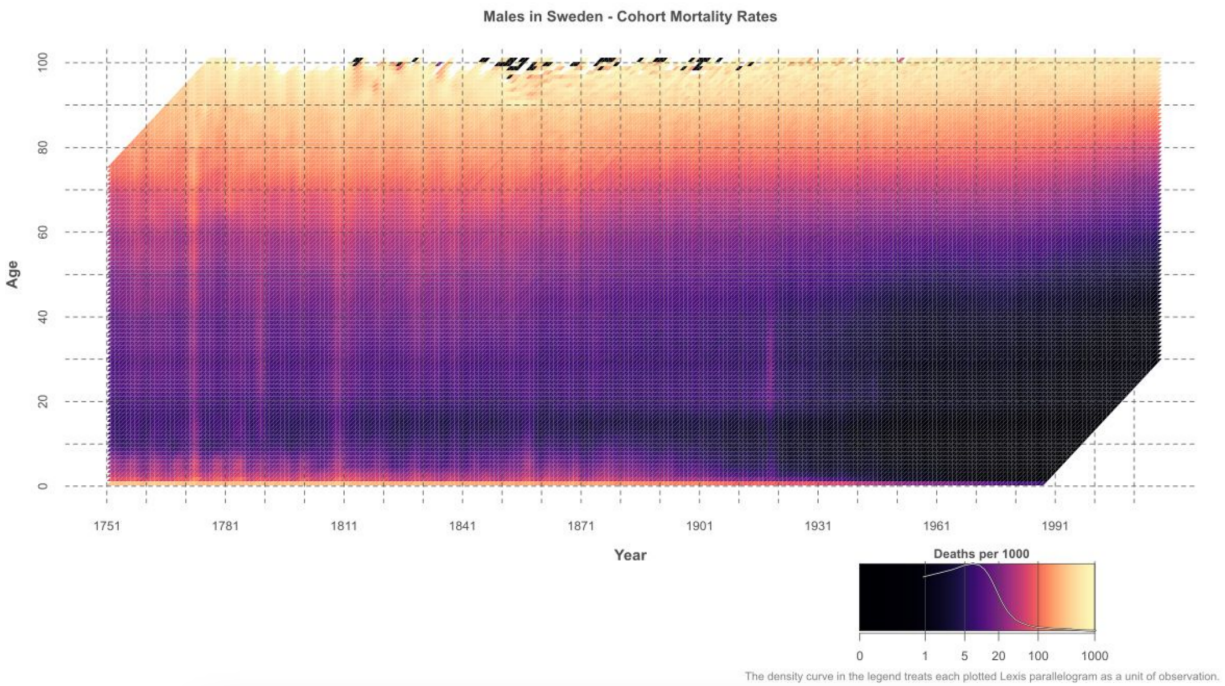
2. True or False: $AB = BA$

3. $AA^{-1} =$

4. If M_i represents age-specific death rates and C_i represents the proportion of a given population in age category i , circle the part of the following equation that represents the contribution of the age composition of populations A and B to the observed difference in death rates between populations A and B (Δ).

$$\Delta = \sum_i (C_i^B - C_i^A) \cdot \left[\frac{M_i^B + M_i^A}{2} \right] + \sum_i (M_i^B - M_i^A) \cdot \left[\frac{C_i^A + C_i^B}{2} \right]$$

Figure 2: Conventional Lexis Surface of Cohort Mortality Trends among Males in Sweden



Three examples!

How would you go about answering this?

What would you need?

What might you need to assume?

- (1) A prominent public commenter raises fears about dysgenics, citing the patterns that fertility among less educated people and people with lower IQs is higher than fertility among higher educated people and people with higher IQs in the U.S. Will fertility lower average population education or IQ over the next 50 years in the U.S.?
- (2) Based on rates observed from the last three years: what fraction of the U.S. population will get long COVID-19 over their lifetimes?
- (3) From 1980-2015 China implemented a one-child policy. What fraction of older-aged people in ten years will have no children to care for them? What fraction of older-aged people in thirty years will have no siblings to care for them?