The University of Texas at Austin, Department of Sociology
General Comprehensive Examination in Demography
April 2008

Section A. Fertility and Family
Please answer one (1) of A1 and A2.

A1. The term "decision" is sometimes used in connection with family formation—specifically, deciding whether to have children, how many, and when. This terminology implies a couple-level process of consciously weighing options and "deciding" in a rational way, what to do with respect to childbearing. Comment on the value of such a perspective and the degree to which it appears explicitly or implicitly in theories of fertility.

A2. Many demographers claim that to understand the future of fertility, one needs to understand the future of the family. What family changes are most important for fertility and what role does the family play in explaining the wide variation in the total fertility rate (TFR) across developed countries?

Section B. Migration and Spatial Distribution
Please answer one (1) of B1 and B2.

B1. How did the pattern of residential segregation in U.S. metropolitan areas change during the decade of the 1990s for different racial and ethnic groups? How do these trends support or contradict the different theories of racial segregation? Based on these theories, what would you predict will be the trends in residential segregation in the 2000s?

B2. Why is immigrant selectivity important when studying immigrant outcomes in the United States such as: a) education, b) health, c) fertility, d) labor markets. Choose two of these outcomes. Describe what has been done to address the effect of immigrant selectivity, and what are the empirical findings in each of these two areas of research.

Section C. Health and Mortality
Please answer one (1) of C1 and C2.

C1. Demographers have observed large differences in health and mortality by educational attainment. They have also documented a strong relationship between education and family experiences. Construct a conceptual model for understanding educational differences in health and/or mortality that incorporates family experiences. Note that "family experiences" may include many distinct concepts.

C2. Recent research explores the contribution of "public works" to the epidemiological transition as it occurred in Western Europe and/or the United States. What are the main findings of this research? That is, were public health measures such as the development of sewage systems important? Rising living standards have also been identified as an important cause of the epidemiological transition. What are the arguments for and against this explanation? Finally, describe the relationship between these two explanations (public works and rising living standards). Are they each supported equally well, does one explanation work better than others, are they competing or complementary?
Section D. Methods
Please answer one (1) of D1 and D2.

D1. Suppose that you were given a female life table and a male life table with the usual notation (with superscripts \( f \) and \( m \) for the female and male life tables, respectively). Assume that a female is randomly selected at birth, and a male is randomly selected at birth, and the respective life tables apply to them. How might you estimate the probability that the male will die before the female? You can describe either a mathematical or a computer simulation approach to this question, but be as specific as possible.

D2. Say you have a DHS data set and the following variables: \( Y= \)Children ever born, \( U= \)urban (0=rural, 1=urban) and \( a= \)age, coded in five-year intervals 15-19 through 45-49. Suppose that the age distribution is substantially different in the rural areas than in the urban areas, and you would like to estimate the urban/rural difference in CEB after adjusting for age.

a) Describe how you would do this using regression (OLS or other).
b) Describe how you would do this using direct standardization.
c) Would there be a difference between the results of a) and b)? Try to describe similarities and differences between the techniques of regression and direct standardization for this kind of setup.

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y = \beta_0 + \beta_1 x_1 + \beta_2 x_2
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