

**Demography Comprehensive Exam  
Fall 2014**

**A. Mortality**

**Please answer one of the two questions below:**

1. One of the most common generalizations in the sociology of health is the inverse relationship between socioeconomic status and mortality. Regardless of the time period, nation, or unit of analysis, higher socioeconomic status is almost invariably linked to lower mortality. While this differential is well established, attempts to explain why the relationship exists have been less successful. What do you think accounts for the inverse relationship between these two variables? What theories, concepts, and mechanisms have been employed to explain this generalization?
  
2. Some scholars have suggested that sex differences in adult mortality will diminish as men's and women's social lives become more equivalent. Outline how men's and women's mortality experiences differ and describe how the sex gap in adult mortality has changed historically. Evaluate the empirical evidence for the idea that the sex gap in adult mortality will diminish with increased social equality in the lives of men and women. That is, will the sex gap in health eventually close? If so, why? If not, why not?

**B. Migration**

**Please answer one of the following three questions**

1. Sustained large-scale immigration in US society over the past three decades has increased the importance of migration and immigrant status in demographic analysis. Discuss how this migration has led to new directions and advances in demographic research in the past decade. Specifically, discuss the research questions, methods, data sets, and findings of three empirical studies that used migration (immigrant) variables. How have the results of these studies advanced the development of theory in population studies?
  
2. Discuss, and describe the significance of social capital in patterns of international migration. In your essay explain how the significance of social capital for international migration can vary by gender, national-origin, and mode of migration (authorized v. unauthorized). In your discussion, make references to three or more specific studies to provide illustrations.
  
3. In some areas of demographic analysis, migration or immigrant status variables have taken on greater prominence in research. Describe and discuss the significance of migration/immigrant indicators in demographic models. In your

discussion, and in reference to at least three published studies, discuss the significance of these indicators as independent or control variables; in addition, discuss any interaction effects found with the migration indicators in the studies. Finally, assess limitations regarding the measurement method of migration or immigrant status in the data sets used in the studies.

### **C. Fertility**

**Please answer one of the two questions below, C.1 or C.2:**

C.1. In recent years, individual US states have adopted restrictions on abortion. Please describe some of the kinds of restrictions that have been adopted? What is known about the impact of these restrictions, and the relative impact of “demand side” versus “supply side” restrictions? What is known about public support for (or resistance to) such restrictions? Describe any research that you know of or may have done bearing on this question, and what its implications for policy and politics might be.

C.2. Ever since the 1960s there has been a debate regarding the importance of economic and social development as a determinant of fertility. Some have argued that fertility can decline rapidly in the absence of development, and have emphasized the role of diffusion, social interaction, and the promotion of family planning. Briefly summarize what you find to be the most interesting aspects of this debate. What evidence do you find most convincing?

### **D. Demographic Techniques**

**Please answer one of the two questions below, D.1 or D.2:**

D.1. Attached you will find a life table for the total population of Bulgaria in the 1947-1949 period.

Eight numbers from this life table have been removed. Please calculate the missing numbers and explain how you did each calculation.

i) In this life table, what is the probability that someone who survives to age 30 will survive to age 80?

j) In the stationary population corresponding to this life table, what fraction of the population age 70 and over is alive ten years later?

k) If you were asked to use this life table to project the population of men and women of reproductive age (15-50) 15 years into the future (to 1962), and you had census estimates of the total population of both sexes in each 5 year age group in 1947, describe as precisely as possible how you would do that projection.

D.2. Suppose that, beginning at the end of 2010, the population of Colombia was suddenly closed to migration to and from Venezuela, Ecuador, and all other countries, was subject to a constant level of mortality (with an expectation of life of 75 years for both sexes) from that point forward, and had varying fertility rates at just the level needed to maintain 774,000 births (the same number of births as in 2014) for the rest of time. In 2014 at about mid-year, the size of the population was 46,245,000, the Crude Birth Rate was 17 per thousand, the Crude Death Rate was 5 per thousand, the Crude Growth Rate was 11 per thousand, and the TFR was 2.1.

- a) What would happen to the age distribution of the population, and over what time frame? Give as complete a description as you can.
- b) What would be the approximate size of the population in the year 2100?
- c) What, approximately, would be the Crude Birth Rate and the Crude Death Rate at the turn of the next century in 2100?

## Life Table for Both Sexes--Bulgaria 1947-49

Age	mx	qx	ax	lx	dx	Lx	Tx	ex
0	0.13404	0.12313	<b>c)</b>	100000	12313	91861	5594339	<b>h)</b>
1-4	0.01241	0.04800	1.26	87687	4209	339201	5502478	62.75
5-9	0.00250	0.01242	2.22	83478	1037	414510	5163277	61.85
10-14	0.00185	0.00920	2.59	<b>d)</b>	759	410378	4748767	57.6
15-19	0.00335	0.01663	2.78	81683	1358	405399	4338389	53.11
20-24	0.00474	0.02340	2.44	80325	1880	396816	3932990	48.96
25-29	0.00409	0.02025	2.42	78445	<b>e)</b>	388127	3536175	45.08
30-34	0.00387	0.01917	2.45	76856	1473	380530	3148048	40.96
35-39	0.00414	0.02051	2.51	75383	1546	373069	2767518	36.71
40-44	0.00494	0.02440	2.53	73837	1801	<b>f)</b>	2394449	32.43
45-49	0.00653	0.03217	2.59	72035	2317	354601	2029708	28.18
50-54	0.00989	0.04833	2.61	69718	3369	340525	1675107	24.03
55-59	0.01460	<b>b)</b>	2.60	66349	4678	320523	1334582	20.11
60-64	0.02324	0.10993	2.55	61670	6779	291766	1014059	16.44
65-69	0.03445	0.15925	2.63	54891	8741	253751	<b>g)</b>	13.16
70-74	0.05975	0.26053	2.54	46150	12023	201231	468542	10.15
75-79	0.09374	0.37839	2.45	34127	12913	137750	267311	7.83
80-84	0.13775	0.50227	2.30	21213	10655	77351	129561	6.11
85-89	<b>a)</b>	0.59685	2.17	10559	6302	34950	52210	4.94
90-94	0.22772	0.68084	2.05	4257	2898	12727	17260	4.05
95-99	0.28531	0.77077	2.02	1359	1047	3670	4533	3.34
100-104	0.35050	0.83813	1.89	311	261	745	863	2.77
105-109	0.42175	0.88977	1.75	50	45	106	118	2.34
110+	0.47989	1.00000	2.08	6	6	12	12	2.08