Problem Set 7

Demography Camp

Summer 2013

Table 1: US Age Specific Data 2007

Age	Female Population	Births	Women nLx
10-14	9,903,611	6,218	5L10=495,972
15-19	10,455,025	445,045	5L15=495,397
20-24	10,152,233	1,082,837	5L20=494,279
25-29	10,237,510	1,208,504	5L25=492,983
30-34	9,585,304	962,179	5L30=491,412
35-39	10,496,803	499,916	5L35=489,247
40-44	11,008,892	105,071	5L40=485,887
45-49	11,555,604	7,349	5L45=480,661

Total Female Population: 152,823,971
Total Male Population: 148,466,361
Sex ratio at birth: 1.047 male births per 1 female birth

Question 1

Calculate the following measures of fertility for the US in 2007:

- Crude Birth Rate

- General Fertility Rate

- Age-Specific Fertility Schedule

- Total Fertility Rate

- Gross Reproduction Rate

Question 2

Now calculate the net reproduction rate. In the absence of international migration, what does this tell you about whether the U.S. population would become larger or smaller in the long run?

Question 3

With the data above, estimate the mean age of the fertility schedule for the U.S. in 2007.

Question 4

With the data above, calculate the replacement-level TFR.

Question 5

Imagine that, starting in 2011, some miraculous medical innovation is introduced so that all deaths below age 50 are averted. If age-specific fertility rates and the sex ratio at birth all stay constant at their 2007 level, what will the new replacement TFR be in 2011?

Question 6

From 2000 to 2005, Australia, Canada, and New Zealand all had NRR values below 1: 0.85, 0.73 and 0.94, respectively. Yet all three countries also had positive rates of natural increase, with crude birth rates well above crude death rates. Explain how this is possible.