

Problem Set 2

Demography Camp

Summer 2013

Turn in answers electronically to kbietsch@princeton.edu or in my mailbox by 9AM tomorrow.

Question 1

On December 31, 2012, Belleville, Illinois had a population of 32,324 people. Over the next 12 months, 3213 babies were born, 4573 people died, 2015 people moved into Belleville, and 3073 people left.

Part A

Write the population balancing equation for Belleville, IL for 2013.

Part B

What is the population of the town at the end of the year?

Question 2

Nigeria's population in 2010 was 158,423,182 with a growth rate of 2.5% a year.

The United States population was 309,349,689 in 2010 with a growth rate of 0.7% a year.

Part A

If these rates remain constant into the future, in what year will Nigeria and the United States have the same size population?

Part B

How big will these twin populations be?

Question 3

Who is the "at-risk" population if I am calculating a:

Part A

Divorce Rate?

Part B

Maternal Mortality Rate?

Question 4

Imagine a population that had 100 people at time t , 130 people at time $t+1$, and 150 people at time $t+2$. What would be the estimated number of person years lived between time t and $t+2$ if:

Part A

You used the midpoint to estimate person years?

Part B

You used the average of the beginning and end to estimate person years?