

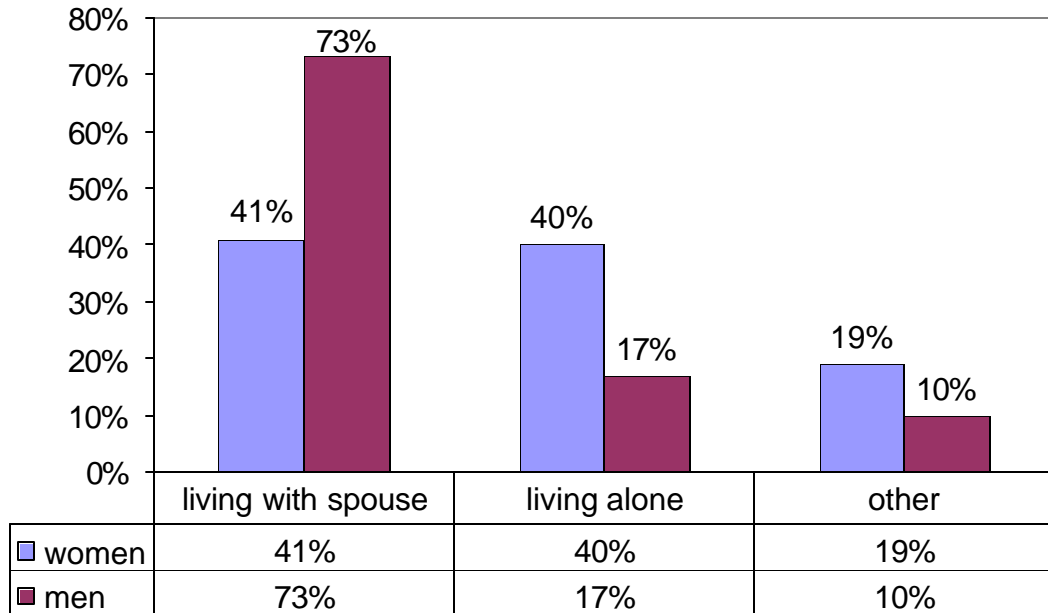
Please write your student number here: _____

Ground rules:

- Do not write your name on the exam. If you're worried about losing the first page, write your student number on each page of the exam.
- If you use pages other than this exam to do your work, STAPLE them to the exam, clearly identify each question with a number, write your student number on those pages and hand them in.
- You can use your notes or books, but you may not communicate with other people about this exam or the material covered by it.
- If you have questions about the exam as you work through it, please email the listserv pb_af527u_wi03@u.washington.edu so that we all can “hear” the question and the answer.
- In order to receive as much credit as possible, please show all of your work. Showing that you understand the question and know how to set up the solution correctly is more important than arriving at the exact answer.
- Feel free to use Excel or another program for your calculations, if necessary. Please attach a print out of your spreadsheet.
- Please be neat -- you can't get credit if I can't read your answers.
- To turn in the exam, you can email it as an attachment (just your student number on the attachment), put it in my box in Par 208, or bring by my office. If I'm not there put it under my door (209F Parrington). If you end up putting it under my door rather than handing it to me, send me an email to let me know you did so.
- Good luck!

The following graph and table present information on the living arrangements of seniors in the United States in 2000. About 41% of seniors are men.

Living Arrangements of Persons 65+ in 2000



- c. What is the probability that randomly selected senior from the U.S. population is a woman living alone? How about a man living alone? (10 points)

- d. Given that a randomly selected senior is lives with a spouse, what is the probability that the senior is a man? A woman? What explanation can you offer for this? (10 points)
- e. Are housing arrangements and gender independent for seniors in the U.S.? Show how you arrive at your answer. (10 points)

- f. Write a paragraph interpreting at least two columns of the graph as well as your findings in a-e for a non-technical policy audience. Discuss the policy implications of your findings. (15 points)

3. Over the past 10 years, concerns have grown over increasing traffic in the Puget Sound. One way the Washington State Department of Transportation (WDOT) measures traffic congestion is by looking at travel time. To help people plan their travel, WDOT estimates that average trip from Seattle to Bellevue at 5:40 pm (at peak) takes 17 minutes and, 95% the time, the trip will not exceed 30 minutes. They also believe this travel time approximates a normal distribution.
- a. What is the standard deviation of peak travel time for the trip from Seattle to Bellevue? (10 points)
- b. Using your answer in 3a, what proportion of drive times fall between 20 and 30 minutes? (5 points)
- c. Write a paragraph explaining your results to a non-technical policy audience. (10 points)

Extra Credit (5 Points):

On a busy holiday weekend, a national airline has many requests for standby flights at half of the usual one-way fare. However, past experience has shown that these passengers have only a 1 in 5 chance of getting on the standby flight. When they fail to get on the standby flight, their only other choice is to fly first class on the next flight out. Suppose the usual one-way fare to a certain city is \$80 and the cost of flying first class is \$120. Should a passenger who wishes to fly to this city opt to fly as a standby?