# Chapter 21-23 Practice Problems 

May 13, 2012

A survey was done on the age of people at Dartmouth. 100 students were polled and the results were as follows:

| Age | \# of students |
| :---: | :---: |
| 17 | 10 |
| 18 | 20 |
| 19 | 15 |
| 20 | 20 |
| 21 | 20 |
| 22 | 15 |

1. Give a $95 \%$ confidence interval for the percent of students that are over 17 years old (not including 17).
2. How many students would I have to poll (assuming the proportions stay the same as they are currently) to be $99 \%$ sure that the percent of students over 17 is greater than $85 \%$ ?
3. Give a $95 \%$ confidence interval for the average age of students at Dartmouth.
4. How many students would I have to poll (assuming the proportions stay the same as they are currently) to be $99.7 \%$ sure that the average age of students is over 19 ?

## Answers

Here are the answers I got. If you keep getting something different there are rounding errors, and for parts 2 and 4 there are slightly different approaches, so don't be discouraged! Feel free to email me and I'll try to respond.

1. $90 \% \pm 6 \%$
2. 244
3. $19.65 \pm 0.32$
4. 54,57 or 58
