

Exercise 6A.1

For a random sample of 800 males, 35 were observed to have a particular type of cyst. Calculate a 95% confidence interval for the proportion of males in the population who have the cyst.

Exercise 6A.2

Suppose that out of 10,000 50- to 54-year-old women sampled whose mother had breast cancer, 400 had breast cancer at some time in their lives. What is the 99% confidence interval for the incidence rate of breast cancer in such a population?

Exercise 6A.3

In the University of New Hampshire student survey, students reported their GPA. We are interested in the proportion of students who have a GPA lower than 2.5. Summary of the data are in the Stata output on the next page.

(a) What is the estimate of the desired proportion?

(b) Use this information to test whether the proportion of all students (the population) is equal to 25%.

(For problem on previous page)

```
. gen lowgpa = 0 if gpa > 0
```

```
. replace lowgpa = 1 if gpa < 2.5  
(47 real changes made)
```

```
. tab lowgpa
```

lowgpa	Freq.	Percent	Cum.
-----+-----			
0	196	80.66	80.66
1	47	19.34	100.00
-----+-----			
Total	243	100.00	

Exercise 6A.4

In the University of New Hampshire student survey we have information on each student's sex. Use the Stata output below to test whether the proportion of females is significantly different from 50%.

```
. tab gender
```

Gender (male)	Freq.	Percent	Cum.
-----+-----			
Female	134	55.14	55.14
Male	109	44.86	100.00
-----+-----			
Total	243	100.00	