Chapter 7

1. What is the difference between an estimator and an estimate?

An estimator is a random variable that depends on the sample information. An estimate is a specific value of the random variable.

2. What is the bias of an unbiased estimator?

Zero

3. What is the most efficient estimator?

The unbiased estimator with the smallest variance.

4. How is the confidence interval of an estimate determined?

$a < \theta < b$ *, with* $100(1-\alpha)\%$

5. How are the limits of a confidence interval indicated??

Upper confidence limit and Lower confidence limit

6. In what way could we reduce the margin of error??

By reducing the standard deviation, increasing the sample size or decreasing the confidence level.

7. When is the student's t distribution used?

If the population variance is unknown.