

STAT 340

Chapter 14 - Practice Questions Part I

1. Find critical value for the following confidence levels.

Confidence Level (C)	$\frac{C + 1}{2}$	Critical Z value (z^*)
80%		
90%		
95%		
99%		

2. A random sample of 31 seventh grade girls was taken from a Midwest school district. The study indicated that the mean IQ score for these girls is 91. The standard deviation for the IQ score for girls in the Midwest is 15.84.
- a. Find the sampling distribution of the sample mean.
- b. Construct a 99% confidence interval for the average IQ score of this population and interpret the results.

- c. Construct a 90% confidence interval for the average IQ score of this population and interpret the results.

- 3. Body length of deer mice is normally distributed with mean μ (unknown) and standard deviation 8 mm. Consider a random sample of 14 deer mice with sample mean of body length 91.1 mm.

- a. Find the sampling distribution of the sample mean?

- b. Construct a 95% confidence interval for μ and interpret the results.

- c. How would the confidence interval change if

- i. the confidence level increased?

- ii. the sample size increased?

- iii. both confidence level and sample size increased?