

### Quiz 3 Review Chapters 7, 8, & 9

Quiz contains: True/False, Multiple Choice, Short Answer, and Computations

To perform well, you need to understand the concepts we have discussed in class, as well as be able to apply the concepts to computations.

Here are some sample computations you should be able to perform:

- 1) The following samples were obtained from a normal population with  $\mu = 100$  and  $\sigma = 10$ . Find the z-score corresponding to each sample mean.
  - a)  $\bar{X} = 98$  for a sample of  $n = 3$
  - b)  $\bar{X} = 99$  for a sample of  $n = 35$
  
- 2) For a normal population with  $\mu = 120$  and  $\sigma = 8$ :
  - a) What is the probability of obtaining a sample mean greater than 122 for a sample of  $n = 4$  scores?
  - b) What is the probability of obtaining a sample mean greater than 122 for a sample of  $n = 16$  scores?
  
- 3) A researcher investigates whether or not listening to Mozart improves mental functioning. It is known that scores on a standardized test of math ability are normally distributed with  $\mu = 70$  and  $\sigma = 7$ . A random sample of  $n = 15$  students listen to Mozart and are then tested. For this sample, the mean is  $\bar{X} = 74$ . Does listening to Mozart improve mental functioning? Test with  $\alpha = .01$ , one-tail.
  
- 4) A sample of Psychology 311 students takes a math comprehension test. If the mean for the general population on this test is  $\mu = 20$ , can you conclude that this sample is significantly different from the population? Test with  $\alpha = .05$ .  
Scores: 16 18 18 16 19 21 23 19 20

You should also be able to...

- C Use the normal table to estimate probabilities of samples.
- C Identify the 5 steps of hypothesis testing

Finally, you should be very familiar with:

- C Requirements for using normal table
- C Differences between Type I vs. Type II error
- C How sample size affects probability
- C The concept of standard error

Remember: This study guide gives you an idea of what to expect on the quiz. It is not an exact replica, and all material covered in the chapters and in class is fair game.