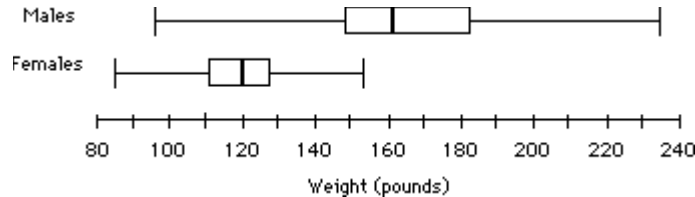


Questions 1-10 are multiple choice. Circle the letter of the best response on answer sheet.
 [3 pts each]

- 1) The weights of the male and female students in a class are summarized in the following boxplots:



Which of the following is **NOT** correct?

- a) About 50% of the male students weigh less than 160 lbs.
 - b) About 25% of female students have weights less than 110 lbs.
 - c) The first quartile weight for male students is about 160 lbs.
 - d) About 50% of the female students weigh between 110 and 128 pounds.
 - e) The female student weights have less variability than the male student weights.
- 2) A professor teaches two statistics classes. The first class has 25 students and their mean on the first test was 85. The second class has 15 students and their mean on the same test was 77. What is the mean on this test if the professor combines the scores for both classes?
- a) 78
 - b) 79
 - c) 80
 - d) 81
 - e) 82
- 3) The following table gives descriptive statistics for the weights (in ounces) of 200 newborns from in North Carolina. If a baby has a weight such that his or her standardized weight (or z -score) is $z = -2$, what is his or her weight?

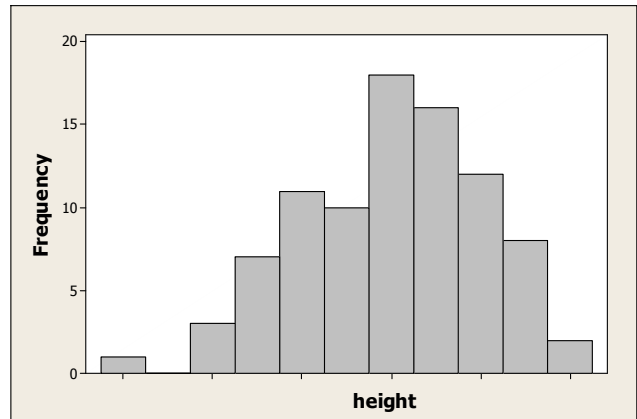
Descriptive Statistics: Weight						
Variable	N	Mean	Median	TrMean	StDev	SE Mean
Weight	200	114.70	116.50	115.89	22.65	1.60
Variable	Minimum	Maximum	Q1	Q3		
Weight	14.00	170.00	105.00	128.00		

- a) 45.30 ounces
- b) 69.40 ounces
- c) 112.70 ounces
- d) 137.35 ounces
- e) 160.00 ounces

- 4) Two variables are said to be negatively associated if
- above average values of one variable tend to accompany below average values of the other.
 - above average values of one variable tend to accompany above average values of the other.
 - below average values of one variable tend to accompany below average values of the other.
 - below average values of one variable can be accompanied by either above or below average values of the other.
- 5) The results of an experiment are said to be statistically significant if
- they are important to statisticians, regardless of their importance to the investigators.
 - both researchers and statisticians agree the results are meaningful and important.
 - the observed effect is so large that it would rarely occur by chance.
 - they support the findings of previous, similar studies.
- 6) Which of the following statements is correct?
- Changing the units of measurements of x or y does not change the value of the correlation r .
 - A negative value for the correlation r indicates the data are strongly unassociated.
 - The correlation always has the same units as the x variable, but not the y variable.
 - The correlation always has the same units as the y variable, but not the x variable.
- 7) In a recent study, a random sample of children in grades two through four showed a significant negative relationship between the amount of homework assigned and student attitudes. The amount of homework assigned is
- an explanatory variable.
 - a response variable.
 - a confounding variable.
 - a lurking variable
 - None of the above.
- 8) A simple random sample of size n is defined to be
- a sample of size n chosen in such a way that every unit in the population has the same chance of being selected.
 - a sample of size n chosen in such a way that every unit in the population has a known nonzero chance of being selected.
 - a sample of size n chosen in such a way that every set of n units in the population has an equal chance to be the sample actually selected.
 - all of the above. They are essentially identical definitions.

- 9) Suppose a large distribution of positive numbers had a mean of 15 and a standard deviation of 20. The distribution also had a median of 12 and a mode of 5. Based on these statistics, you could probably guess that the shape of the distribution is
- symmetric.
 - skewed right.
 - skewed left.
 - bimodal.
 - normal.

- 10) The heights of the 88 students in my statistics classes ranged from 56 inches to 76 inches. The mean was about 67.6 inches and the distribution is shown at the right. What is a good estimate for the standard deviation?
- 3.2
 - 4
 - 10
 - 20



- 11) According to the U.S. Center for Health Statistics, females between 25 and 34 years old have a bell shaped distribution for height with a mean of 65 inches and a standard deviation of 3.5 inches. [6 pts]

- Give an interval within which about 68% of the heights fall.
- Give an interval within which about 95% of the heights fall.

- 12) In 2004, about 46% of the 68 assistant professors were male, about 54% of the 72 Associate professor's were male, and about 77% of the 82 full Professors were male. Construct a contingency table giving counts relating gender and rank below. [8 pts]

	Male	Female	Total
Assistant Professor			
Associate Professor			
Professor			
Total			

15) The following two-way table categorizes the class standing at Hope College for men and women for Fall 2006. For parts a – c leave your answers as fractions. [16 pts]

Class	Men	Women	Total
Freshmen	334	471	805
Sophomore	323	440	763
Junior	291	422	713
Senior	304	524	828
Non-Degree	31	63	94
Total	1283	1920	3203

- a) What proportion of all Hope students are seniors?
- b) What proportion of the seniors is female?
- c) What proportion of the females are seniors?
- d) Suppose you are planning to randomly choose one student from the senior class and one junior. Which is more likely to be male, the senior or the junior? *Explain your answer using the appropriate proportions or percents.*

Answers for Multiple Choice Questions

Name _____

1. a b c d e
2. a b c d e
3. a b c d e
4. a b c d e
5. a b c d e
6. a b c d e
7. a b c d e
8. a b c d e
9. a b c d e
10. a b c d e