

Name: _____

Section #: _____

Score: _____

Multiple Choice (4 points each)

1. Each of my brother's three dogs has fleas. Therefore, all dogs have fleas. This argument is an example of which of the following fallacies?

- A) Hasty Generalization
- B) Circular Reasoning
- C) False Cause
- D) Straw Man
- E) Diversion

2. At a conference with 50 total people, there are 23 doctors, 31 lawyers, and 3 people who are neither doctors or lawyers. How many people at the conference are both doctors and lawyers?

- A. 7
- B. 12
- C. 54
- D. 3
- E. Impossible – it would have to be a negative number.

3. Given that 12 in = 1 foot, how many square inches are there in 5 square feet?

- A. 144
- B. 24
- C. 0.0347
- D. 720
- E. None of the above.

4. A politician in town makes the following claim during his campaign. "I will cut taxes 10% each year during all 4 years of my term. Therefore, I will cut taxes by 40% during my time in office." Which is correct about the politician's claim.

- A. Claim is True: The total tax cut is 40%
- B. Claim is False: The total tax cut will be more than 40%
- C. Not Enough Information
- D. Claim is False: The total tax cut will be less than 40%

5. Susie lives in a green house. Which of the following is the negation of this proposition?

- A. Susie does not live in a green house.
- B. Billy lives in a green house.
- C. Susie does not live in a house that is not green.
- D. Susie lives in a blue house.
- E. None of the above.

6. In a high school, the Student Government wants to know what they can do to better the school. They divide the school by class and then take a sample from each class. This is an example of what type of sampling

- A. Stratified
- B. Systematic
- C. Convenience
- D. Simple Random
- E. None of the above

7. Sean flipped a coin 100 times and got heads 42 times. He concludes that the probability of getting heads on a flip of his coin is 0.42. Which method did Sean use?

- A. Subjective Method
- B. Theoretical Method
- C. Empirical Method
- D. Monte Carlo Method
- E. Guess and Check Method

8. You go to SNIAGRAB for an awesome sale on ski materials. You narrow your choices down to 3 pairs of ski boots, 2 different sets of ski poles, and 5 different sets of skis. How many different combinations of 1 pair of boots, 1 set of ski poles, and 1 set of skis are there?

- A. 10
- B. 30
- C. 11
- D. 1,240
- E. None of the above.

9. Suppose the probability of event A is $P(A) = 0.3$ and the probability of event B is $P(B) = 0.4$. If A and B are non-overlapping events, what is $P(A \text{ or } B)$?

- A. 0.70
- B. 0.12
- C. 0.60
- D. 0.10
- E. Can not be determined from the information given.

10. On day one I pay you \$2, on day two \$4, on day three \$8, on day four \$16, etc. What type of growth is this?

- A. Exponential, because each day's pay is a power of two.
- B. Exponential, because the increase each day is constant
- C. Linear, because each day's pay is a power of two.
- D. Linear, because the increase each day is constant.
- E. Can not be determined from the information given.

11. The population of Vida, MT increases at a constant rate of 7% each year. What is the approximate doubling time for this town?

- A. 7 years
- B. 10 years.
- C. 20 years.
- D. 70 years.
- E. Cannot be determined without an initial population.

12. One American dollar is worth 1.0478 European Euros. Which of the following is true:

- A. One American Dollar is worth more than One European Euro.
- B. One European Euro is worth more than One American Dollar.
- C. One American Dollar is the same as One European Euro.
- D. None of the Above.

13. You have just conducted a statistical study in which you have collected a qualitative data set. Which of the following would be the most appropriate to make a visual display of your data?

- A. Histogram
- B. Bar Graph
- C. Line Chart
- D. Ojive
- E. None of the Above

14. The probability that a student chosen at random from your class is a French major is 0.05. What is the probability that a student chosen at random from your class is not a French major?

- A. 0.05
- B. 0.95
- C. 1
- D. 0
- E. 0.0025

15. Suppose you make a one-time deposit of \$1000 into Savings Account A which has $APR=4.7\%$ and interest is compounded continuously. You also make a one-time deposit of \$1000 into Savings Account B which has $APR=4.7\%$ and interest is compounded monthly. Which of the following is true?

- A. There is no difference in the balance of Account A and Account B after 1 year.
- B. Account B has a higher balance than Account A after 1 year.
- C. Account A has a higher balance than Account B after 1 year.
- D. The APY for Account B is higher than the APY for Account A.
- E. All of these statements are false.

Partial Credit Questions (10 points each)

1. A recent survey was done to determine if there is a relationship between smoking and drinking coffee. A group of 500 people were surveyed as to whether they drank coffee regularly (one cup a day) and whether or not they smoked regularly (every day). Of the 500 people, 320 drank coffee and 112 smoked. Also, 70 people who drank coffee also smoked. Given this information fill in the missing information in the table below.

a. Fill out the blank spaces in the table below.

	Smoker	Not a Smoker	Total
Coffee Drinker	70		320
Not a Coffee Drinker			
Total	112		500

b. Construct a Venn diagram to display the results of the study above.

2. You have just graduated from college and realize that you have accumulated \$21,000 in student loans. The APR on the loans is 5.3% and interest is compounded monthly.

a) If you want to pay off the student loans in 15 years, what would your monthly payments have to be?

b) When the loan is paid off, how much money will you have paid in interest?

3. John deposits \$1500 into an IRA account that earns interest at a rate of 3.2% compounded continuously.

a. What is the balance in the account after 10 years?

b. How much money did John earn in interest over the 10 year time period. ?

4. The mean price of a 4-bedroom home in Aurora is \$237,000. The mean price of a similar 4-bedroom home in Littleton is \$289,000.

a) Find the Absolute Difference in the price of the Littleton home compared to the Aurora home.

b) Find the Relative Difference in the price of the Littleton home compared to the Aurora home.

5. Find the probability of the following events.

a. Having a 3 child family and having 2 boys and 1 girl in any order.

b. With one pull from a standard deck of cards pulling either a King or a Spade.

6. Find the probability in the following situations.

a. A jury pool consists of 15 males and 10 females. What is the probability that a four person jury is constructed of all males.

b. Suppose that while walking down a hall in the Science Building, the probability that you meet a Senior is 0.15. If you walk down the Science Building and meet people randomly, what is the probability that you meet at least one Senior if you encounter 8 total people on your walk.?

7. Find the number of arrangements in the following situations.

a) The Montana Lottery is determined by randomly choosing 7 ping pong balls that are numbered 1-52 (without repetition). How many different lottery tickets are possible for this particular lottery?

b) How many different ways could the medals (Gold, Silver, and Bronze) for the Olympic 100 meter dash be awarded to the 8 different finalists in the event.

8. In the year 2006, the population of Montana was 1.8 million. This represented a 9% increase over the previous year's population.

a) What was the population of Montana in 2005.

b) If Montana continues to grow at a rate of 9% each year, what will the population be in 2016?

9. You find a bank account in which the APR=3.6% and interest is compounded monthly.

a) What is the APY for this account (round to two decimal places)?

b) You want to save up money to buy a new car in the future. If you want to have \$20,000 saved in 5 years time how, much money should you put in the above account today?

10. Utilize the unit conversion charts in Chapter 2 of your book to answer the following.

a) You go to Great Britain and find that a Liter of Milk costs 0.44 British Pounds per Liter. How much does the milk cost in American \$ per Gallon? (Round to two decimal places).

b) At Widgets Incorporated, it is found that 3 widgets can be made every second. If the company produces widgets constantly at this rate and production runs round the clock, how many widgets will they have at the end of a one year time period. Express your answer in proper scientific notation.