**Econ 206/Test 3**

Write your name on your scantron and write “Version A” next to your name (-2% if not).

1. A graph, table, or formula which relates the possible outcomes of some variable to the likelihood of those outcomes is known as

a. combinatorics b. expected value

c. probability distribution d. law of large numbers

2. In order for the normal probability distribution to be useful in determining probabilities for a measured variable, the variable needs to

a. be symmetrically spread around its mean

b. have a higher likelihood of being near the mean than far from it

c. have a half of the probability higher and half lower than the mean

d. all of teh above

3. Suppose you know that the probability of a sale from 12 PM to 1PM to a given type of customer is 0.2, and the probability of a sale to a second type of customer is 0.4 . Sales to the two types are not related to each other. The probability of a sale to both types of customers is

a. 0.80 b. 0.08

c. 0.60 d. none of the above

4. Using the same information as the prior question, what is the probability of sale to one or the

other type of customer?

a. 0.68 b. 0.08

c. 0.20 d. none of the above

5. Suppose that the futures odds in Las Vegas for the New England Patriots to win the Super Bowl is listed as 9:1. This implies that the probability of New England winning is

a. 0.9 b. 0.8

c. 0.1 d. 0.05

6. Which of the following is true about the t-distribution?

a. it was developed by a engineer/statistician working for Anheuser Busch

b. it is very similar to the normal distribution but adjusts for sample size

c. it is useful whenever the distribution has positive skew

d. none of the above

7. In class and in the movie “21” the importance of using additional information to compute conditional probabilities is illustrated with which game show?

a. Password b. $20,000 Pyramid

c. Jeopardy d. none of the above

8. Suppose that an insurance company computed the likelihood of a major health expense ($10,000) for you to be 0.05 and the probability of a minor expense ($100) to be 1.0. The expected value of total health expenses would be

a. $150 b. 600

c. $1100 d. $750

9. Suppose that on a flip of a coin, if a head comes up you receive $20 and if a tails comes up

you must pay $40. The expected value to you from this coin flip is

a. 0 b. $10

c. $20 d. $40

10. Suppose that a major league hitter averages a hit 30 percent of the time. Which of the following is implied by “the Law of Large Numbers”?

a. if he gets 3 straight hits, his chances of seven straight outs increases

b. if he gets 3 straight hits, his chances of an out on the fourth at bat increases

c. he is likely to be closer to 30 percent in 500 at bats than in 50 at bats

d. all of the above

11. The probability of errors on accounting entries is determined to have a binomial distribution. Excel was used to calculate the following probability:

Number\_s = 2  
Trials = 10

Probability\_s = 0.2

Cumulative = True

Probability = 0.67

This setup and result indicates that

a. There were 10 entries

b. The probability of an error on any one entry is 0.2

c. The probability of 2 errors or fewer is 0.67

d. All of the above

12. The information for accounting errors was adjusted in Excel as below:

Number\_s = 2  
Trials = 10

Probability\_s = 0.2

Cumulative = True

Probability = 0.67

This setup and result indicates that

a. The probability of 2 or more errors is 0.2

b. The probability of exactly 2 errors is 0.67

c. The probability of 1 error is 0.33

d. All of the above

13. In the setup given in #11, the probability of more than 2 errors is

a. 0.80 b. 0.20

c. 0.33 d. none of the above

14. If you know the mean number shoppers in front of your store in a 1 hour interval, to compute the probability of more than a specific number of shoppers passing during an hour, you should use

a. Expected Value b. Poisson Distribution

c. Normal Distribution d. none of the above

15. The probability of IQ is normally distributed. Excel was used to calculate the following probability:

X = 125

Mean = 100

Standard\_dev = 10

Cumulative = True

Probability = 0.99

In the setup and results provided

a. the average IQ is 125

b. the likelihood of someone have an IQ of 125 is 0.99

c. the variable cannot really be normally distributed

d. none of the above

16. Given the information provided in #15, what is the probability that someone has an IQ between 80 and 120?

a. 0.5 b. 0.68

c. 0.95 d. 0.97

17. Given the information provided in #15, what is the probability that someone has an IQ of greater than 130?

a. 0.05 b. 0.025

c. 0.01 d. 0.0015

18. Suppose that a company’s monthly sales are normally distributed with a mean of 10,000 and a standard deviation of 10. What is the probability that sales will be 1.0 standardized unit above or below the mean?

a. 0.68 b. 0.16

c. 0.28 d. 0.84

19. In basic probability calculations, such as computing the likelihood of hitting Red in roulette, the procedure is to

a. use the binomial distribution in Excel or in a table

b. count the number of total outcomes and Red outcomes and divide Red by total

c. assume that the likelihood is normally distributed

d. none of the above

20. What is the likelihood of being above the mean with a normally distributed variable/

a. 0.5 b. 0.34

c. 0.05 d. none of the above

21. Put A for your answer

Correct Answers: 1c, 2d, 3b, 4d, 5c, 6b, 7d, 8b, 9b, 10c, 11d, 12 (no answer), 13c, 14b, 15d, 16c, 17d, 18a, 19b, 20a