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Question **1**

Incorrect

Mark 0.00 out of 0.20

The probability of winning a certain lottery is 1/51949. For people who play 560 times, find the standard deviation for the random variable X, the number of wins.

a. None of the other choices is correct

b. 0.1223

c. 0.1137

d. 0.1038 ✖

e. 0.0108

The correct answer is:
0.0108

Question **2**

Correct

Mark 0.20 out of 0.20

Customers of an internet service provider initiate new accounts at the average rate of 10 accounts per day. The number of new accounts that is known to be Poisson random variable.
What is the probability that exactly 16 new accounts will be initiated in two days?

Select one:

a. 0.0317

b. 0.008

c. 0.01

d. 0.0646 ✔

The correct answer is: 0.0646

Question **3**

Correct

Mark 0.20 out of 0.20

Parking at a large university has become a very big problem. University administrators are interested in determining the average parking time (e.g. the time it takes a student to find a parking spot) of its students. An administrator inconspicuously followed 290 students and carefully recorded their parking times. Identify the population of interest to the university administration.

Select one:

- a. the entire set of faculty, staff, and students that park at the university
- b. the students that park at the university between 9 and 10 AM on Wednesdays
- c. the 290 students from whom the data were collected
- d. the entire set of students that park at the university ✔

The correct answer is: the entire set of students that park at the university

Question **4**

Correct

Mark 0.20 out of 0.20

In a clinical study, volunteers are tested for a gene that has been found to increase the risk for a disease. The probability that a person carries the gene is 0.15.
What is the probability four people will have to be tested before two with the gene are detected?

Select one:

- a. None of these
- b. 0.013
- c. 0.016
- d. 0.049 ✔

The correct answer is: 0.049

Question **5**

Incorrect

Mark 0.00 out of 0.20

A group of students were asked if they carry a credit card. The responses are listed in the table.

Class	Credit Card Carrier	Not a Credit Card Carrier	Total
Freshman	25	35	60
Sophomore	29	11	40
Total	54	46	100

If a student is selected at random, find the probability that he or she owns a credit card given that the student is a sophomore.

Select one:

- a. 0.290
- b. 0.537 ✖
- c. 0.725
- d. 0.275

The correct answer is: 0.725

Question **6**

Correct

Mark 0.20 out of 0.20

A test consists of 10 multiple choice questions with five choices for each question. As an experiment, you guess on each and every answer without even reading the questions. What is the probability of getting exactly 6 questions correct on this test?

Select one:

- a. 0.006 ✔
- b. 0.304
- c. 0.011
- d. 0.256

The correct answer is: 0.006

Question **7**

Correct

Mark 0.20 out of 0.20

The following probability distribution has been assessed for the number of accidents that occur in a mid western city each day:

Accidents	0	1	2	3	4
Probability	0.25	0.2	0.3	0.15	0.1

Based on this probability distribution, the standard deviation in the number of accidents per day is:

- a. 2.65
- b. 2
- c. 0.12
- d. None of the other choices is correct ✔

The correct answer is:
None of the other choices is correct

Question **8**

Correct

Mark 0.20 out of 0.20

An urn contains 30 red and 20 green balls. A sample of 5 balls is selected at random, without replacement. Find the mean and standard deviation of the number of red balls in the sample.

- a. 3 and 1.102 ✔
- b. 3 and 0.212
- c. 3 and 3.252
- d. 3 and 2.201

The correct answer is:
3 and 1.102

Question **9**

Correct

Mark 0.20 out of 0.20

Over a very long period of time, it has been noted that on Friday's 25% of the customers at the drive-in window at the bank make deposits. What is the probability that it takes 4 customers at the drive-in window before the first one makes a deposit.

Select one:

- a. 0.2190
- b. 0.0023
- c. 0.1054 ✔
- d. 0.1187

The correct answer is: 0.1054

Question **10**

Correct

Mark 0.20 out of 0.20

The probability that a radish seed will germinate is 0.7. A gardener plants seeds in batches of 11. find the standard deviation for the random variable X, the number of seeds germinating in each batch.

- a. 1.76
- b. 1.12
- c. 1.52 ✔
- d. 2.15

The correct answer is:
1.52

Question **11**

Correct

Mark 0.20 out of 0.20

Bob is a high school basketball player. His probability of making a free throw is 0.70. During the season, what is the probability that Bob makes his third free throw on his fifth shot?

Select one:

- a. None of these
- b. 0.1852 ✔
- c. 0.3087
- d. 0.1672

The correct answer is: 0.1852

Question **12**

Correct

Mark 0.20 out of 0.20

The random variable x represents the number of cars per household in a town of 1000 households. Find the probability of randomly selecting a household that has less than two cars.

Cars	Households
0	125
1	428
2	256
3	108
4	83

Select one:

- a. 0.809
- b. 0.247
- c. None of these
- d. 0.553 ✔

The correct answer is: 0.553

Question **13**

Incorrect

Mark 0.00 out of 0.20

The components in the system are regarded as independent trials. We have a system with 100 independent components. The probability that a component will fail during a prescribed period of time is 0.005. What is the probability that the system is operating at the end of the period, which requires that no component fail

- a. 0.707 ✖
- b. 0.808
- c. 0.404
- d. 0.606
- e. 0.505

The correct answer is:
0.606

Question **14**

Correct

Mark 0.20 out of 0.20

An opinion poll asks a sample of 1,100 people whether they support reducing the number of legal immigrants to the U.S.; 53% of these 1,100 people say "Yes".
The number 53% is a .....

Select one:

- a. margin of error
- b. Sample
- c. Statistic ✔
- d. Parameter

The correct answer is: Statistic

Question **15**

Incorrect

Mark 0.00 out of 0.20

	Head Injuries	Not Injured
Wore Helmet	96	656
No Helmet	480	2330

If one of the subjects is randomly selected, find the probability of selecting someone who had a head injury or wore a helmet.

Select one:

- a. 0.027
- b. 0.346
- c. None of these
- d. 0.373 ✖

The correct answer is: 0.346

Question **16**

Correct

Mark 0.20 out of 0.20

According to data from the American Medical Association, 10% of us are left-handed. If three people are randomly selected, find the probability that they are all left-handed.

Select one:

- a. 0.3
- b. 0.729
- c. 0.001 ✔
- d. 0.9

The correct answer is: 0.001

Question **17**

Correct

Mark 0.20 out of 0.20

	Male (51%)	Female (49%)
Smoke cigars	9.5%	1.7%
No smoke cigars	90.5%	98.3%

Find Prob(male|smoke cigars) ?

Select one:

- a. 0.365
- b. 0.095
- c. 0.147
- d. 0.853 ✔

The correct answer is: 0.853

Question **18**

Correct

Mark 0.20 out of 0.20

Casualty data from the great flu epidemic of 1918 were collected for a study. This represents what type of study?

- A. Prospective
- B. Retrospective ✔
- C. Qualitative
- D. Quantitative

The correct answer is:
Retrospective

Question **19**

Correct

Mark 0.20 out of 0.20

In a survey of college students, 880 said that they have cheated on an exam and 1721 said that they have not. If one college student is selected at random, find the probability that the student has cheated on an exam.

Select one:

- a. 0.994
- b. 0.338 ✔
- c. 0.662
- d. 2.956

The correct answer is: 0.338

Question **20**

Incorrect

Mark 0.00 out of 0.20

A box contains eight red balls, four green balls and eight yellow balls. A ball is selected at random from the box that is not a red ball. What is the probability that it is a green ball?

Select one:

- a. 2/3
- b. 1/5 ✖
- c. 1/3
- d. 1
- e. 3/5

The correct answer is: 1/3

Question **21**

Correct

Mark 0.20 out of 0.20

Suppose that a shipment contains 5 defective items and 10 non defective items .If 7 items are selected at random without replacement , what is the probability that at least 3 defective items will be obtained?

Select one:

- a. 0.3210
- b. 0.3215
- c. 0.4001
- d. 0.4267 ✔

The correct answer is: 0.4267

Question **22**

Complete

Marked out of 0.60

Only 1 in 100 adults is afflicted with Ncovid19 for which a diagnostic test has been developed. The test is such that when an individual actually has the disease, a positive result will occur 99.9% of the time, whereas an individual without the disease will show a positive test result only 2% of the time.

If a randomly selected individual is tested and has positive test. What is the probability that the individual has the disease?

D: people have Ncovid19 virus

P: people tested positive N: people don't have virus

P(D) = 1/100 = 0.01

P(P|D) = 0.999

P(P|N) = 0.02 P(N) = 0.99

According to Bayes' Theorem:

P(D|P) = (P(D)*P(P|D)) / ((P(D)*P(P|D) + P(N)*P(P|N)) = (0.01*0.999) / (0.01*0.999+0.99*0.02) = 0.335.

Question **23**

Correct

Mark 0.20 out of 0.20

The number of industrial injuries per working week in a particular factory is known to follow a Poisson distribution with variance is 0.5.

Find the probability that there will be no accidents in a three-week period.

- a. 0.606
- b. 0.223 ✔
- c. 0.707
- d. 0.303

The correct answer is:
0.223

Question **24**

Incorrect

Mark 0.00 out of 0.20

The following probability distribution has been assessed for the number of accidents that occur in a midwestern city each day:

Accidents	Probability
0	0.25
1	0.20
2	0.30
3	0.15
4	0.10

Find the variance in the number of accidents per day.

Select one:

- a. None of these
- b. 1.65 ✖
- c. 1.21
- d. 1.63
- e. 1.28

The correct answer is: 1.63

Question **25**

Correct

Mark 0.20 out of 0.20

There is an 80% chance that a prospective employer will check the educational background of a job applicant. For 100 randomly selected job applicant, find the probability that exactly 85 have their education backgrounds checked?

Select one:

- a. 0.08
- b. 0.048 ✔
- c. 0.016
- d. 0.036

The correct answer is: 0.048

Question **26**

Not answered

Marked out of 1.00

2-148. An inspector working for a manufacturing company has a 99% chance of correctly identifying defective items and a 0.5% chance of incorrectly classifying a good item as defective. The company has evidence that its line produces 0.9% of nonconforming items.

(a) What is the probability that an item selected for inspection is classified as defective?

(b) If an item selected at random is classified as nondefective, what is the probability that it is indeed good?

Question **27**

Correct

Mark 0.20 out of 0.20

Bits are sent over a communications channel in packets of 12. If the probability of a bit being corrupted over this channel is 0.1 and such errors are independent.
What is the probability that 2 bits are corrupted?

Select one:

- a. 0.51
- b. 0.15
- c. 0.23 ✔
- d. 0.32

The correct answer is: 0.23

Question **28**

Correct

Mark 0.20 out of 0.20

Which is an example of quantitative data?

- A. Weights of high school students ✔
- B. Colors of the rainbow
- C. Consumer ratings of a particular automobile (below average, average and above average)
- D. Genders of actors and actresses

The correct answer is:
Weights of high school students

Question **29**

Correct

Mark 0.20 out of 0.20

The events A and B are mutually exclusive. If P(A)=0.7 and P(B)=0.2, what is P(A or B)?

Select one:

- a. 0.14
- b. 0
- c. 0.9 ✔
- d. 0.5

The correct answer is: 0.9

Question **30**

Correct

Mark 0.20 out of 0.20

An office has three telephone lines. At any given time, the probability that at least one line is in use is 0.8. Find the probability that, at any given time, all three are in use.

- a. 0.0267
- b. 0.7223
- c. 0.07157 ✔
- d. 0.200
- e. 0.0071

The correct answer is:
0.07157

Question **31**

Correct

Mark 0.20 out of 0.20

Suppose P(X=k) is the probability of the random variable X when X=k defined as below. What is the expected value of X ?

X	1	3	4
P	0.1	0.5	0.4

Select one:

- a. 2.1
- b. 3.2 ✔
- c. 0.76
- d. 1.3

The correct answer is: 3.2

Question **32**

Incorrect

Mark 0.00 out of 0.20

From 4 chemists and 3 physicists a committee of 3 people can be formed at random. Determine the probability that that committee consists of exactly 2 chemists.

Select one:

- a. 0.3428
- b. 0.5143
- c. 0.1714 ✖

The correct answer is: 0.5143

Question **33**

Correct

Mark 0.20 out of 0.20

Find the standard deviation, σ, for the binomial distribution which has the stated values of n = 1622 and p = 0.57. Round answer to the nearest hundredth.

Select one:

- a. 14.84
- b. 19.94 ✔
- c. 17.53
- d. 23.21

The correct answer is: 19.94

Question **34**

Correct

Mark 0.20 out of 0.20

Find the mean for the binomial distribution where n=1568, p=0.7.

Select one:

- a. 1344.2
- b. 1353.2
- c. 1097.6 ✔
- d. 1341.0

The correct answer is: 1097.6

Question **35**

Correct

Mark 0.20 out of 0.20

Distribution is ...

Select one:

- a. The spread of data over the range of values ✔
- b. The values that lie very far away from the others.
- c. Changing characteristics of the data over time.
- d. The middle of the data

The correct answer is: The spread of data over the range of values

Question **36**

Correct

Mark 0.20 out of 0.20

You are dealt two cards successively without replacement from a standard deck of 52 playing cards.
Find the probability that the first card is a two and the second card is a ten.

Select one:

- a. 0.250
- b. 0.994
- c. 0.006 ✔
- d. 0.500

The correct answer is: 0.006

Question **37**

Correct

Mark 0.20 out of 0.20

Messages arrive at a computer at an average rate of 15 messages/second. The number of messages that arrive in 1 second is known to be a Poisson random variable.

Find the probability that no messages arrive in 1 second.

- a. **3.06*10^(-7)** ✔
- b. **0.15*10^(-7)**
- c. **3.06*10^(-10)**
- d. **0.15*10^(-15)**
- e. **3.06*10^(-15)**

The correct answer is:
3.06*10^(-7)

Question **38**

Correct

Mark 0.20 out of 0.20

In a game, you have a 1/33 probability of winning 121 dollars and a 32/33 probability of losing 7 dollars. What is your expected value?

Select one:

- a. -$3.12 ✔
- b. $10.45
- c. - $6.79
- d. $3.67

The correct answer is: -$3.12

Question **39**

Correct

Mark 0.20 out of 0.20

When rolling a die 100 times, what is the probability of rolling a "4" exactly 25 times?

Select one:

- a. 0.2500
- b. 0.0032
- c. 0.0098 ✔
- d. 0.0040

The correct answer is: 0.0098

Question **40**

Correct

Mark 0.20 out of 0.20

The Ski Patrol at Criner Mountain Ski Resort has determined the following probability distribution for the number of skiers that are injured each weekend:

Injured skiers	0	1	2	3	4
Probability	0.05	0.15	0.4	0.3	0.1

Based on this information, what is the expected number of injuries per weekend?

- a. 2
- b. 2.55
- c. 2.55
- d. 2.1
- e. 2.25 ✔

The correct answer is:
2.25

Question **41**

Correct

Mark 0.20 out of 0.20

With one alarm clock , we have a 0.975 probability of being awakened. What is the probability of being awakened if we are using two alarm clocks?

Select one:

- a. None of these
- b. 0.9875
- c. 0.976625
- d. 0.999375 ✔

The correct answer is: 0.999375

Question **42**

Correct

Mark 0.20 out of 0.20

A single six-sided die is rolled. Find the probability of rolling a number less than 3.

Select one:

- a. 0.5
- b. 0.1
- c. 0.25
- d. 0.333 ✔

The correct answer is: 0.333

Question **43**

Correct

Mark 0.20 out of 0.20

Let Prob(bus) = Prob(car) = Prob(train) = 1/3, and Prob(late|car) = 0.5, Prob(late|train) = 0.01, Prob(late|bus) = 0.2.
Find Prob(car|late).

Select one:

- a. 0.704 ✔
- b. 0.237
- c. 0.5
- d. None of these

The correct answer is: 0.704

Question **44**

Incorrect

Mark 0.00 out of 0.20

From past experience it is known that 3% of accounts in a large accounting population are in error.

What is the probability that 5 accounts are audited before an account in error is found?

- a. 0.016
- b. 0.035
- c. 0.027
- d. 0.073 ✖

The correct answer is:
0.027

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