Coursework example

Science, Statistics

FINAL EXAM PLEASE SHOW ALL WORK WHERE POSSIBLE TO RECEIVE CREDIT

A lecture hall has a of 300 The wants to select 20 students to participate in a survey. Each student has a ticket with a number between 1 and 300 written on it. He selects his first student at random. The student he selects has a ticket with the number 10. If he uses systematic sampling, determine the following:

a. The value of k(3 points)

b. The ticket number for each student.(5 points)

2. A bank auditor claims that credit card balances are normally distributed, with a mean of $2870, and a standard deviation of $900.

a. What is the probability that a randomly selected credit card holder has a credit card balance that is less than $2500?(7 points)

b. If 100 credit card holders are randomly selected, How many of them would you expect to have a credit card balance is less than $2500? (Round to the nearest whole number)(3 points)

3. A coin is flipped six times. Find the probability of getting heads exactly two times?

(6 points)

4. There are six democrats and five republicans on a senate committee. A committee consisting of four people must be formed.

a. In how many ways can a committee of four people be formed?(3 points)

b. In how many ways can two democrats and two republican be chosen? (3 points)

c. What is the probability that two democrats and two republican will be chosen? (2 points)

5. A cafeteria offers the menu shown below. A meal consists of main course selection, a drink and a dessert

Main course

Dessert

Drink

Pizza

Frankfurter

Ham sandwich

Tuna sandwich

Jelly sandwich

Ice cream

Cookies

Jello

Apple pie

Milk

Juice

Ginger ale

a. How many different meals can be serve from this menu

60

b. John wants to select a meal but he does not eat tunafish or ham. How many different meals can he select which does not contain ham or tunafish?

46

c. Lisa arrived late for lunch. Pizza, ice cream and ginger are sold out. How many different meals can she select from the remaining in the menu?

57

6. A family has two children. Let x be a random variable which represents the number of girls the family can have. Construct a probability distribution which shows the possible number of girls the family can have

X

2

3

4

P(x)

7. Complete the following table below

Class

Frequency

Mid-point

Mid-point*frequency

5-9

4

7

28

9-13

2

11

22

13-17

7

15

105

17-21

6

19

114

Calculate the mean

8. Multiple choice questions consist of 10 questions. Each question has 5 choices. There is only one correct answer for each question. Find the probability that a student answers four questions correctly by guessing?

9. Given the data values: 59, 20, 21, 34, 52, 48, 24, 29, 55. Find the quartiles Q1, Q2 and Q3.

10. Given the following data below, copy and complete the table. 70, 43, 48, 72, 53, 81, 76, 54, 58, 64, 51, 53, 75, 62, 84, 67, 72, 80, 88, 65, 60, 43, 53, 42, 57, 61, 55, 75, 82, 71.

Interval

Tally

Frequency

Mid-point

Relative frequency

Cumulative frequency

40-49

4

4

44. 5

1. 483

1. 483

50-59

8

8

54. 5

1. 817

3. 3

60-69

6

6

64. 5

2. 15

5. 45

70-79

7

7

74. 5

2. 483

7. 93

80-89

5

5

84. 5

2. 817

10. 75

11. A student at Berkeley college took the following courses last semester:

calculate the student’s GPA.

Course

#of credits

Grade

Point value

Psychology

3

A

4. 0

Sociology

3

C

2. 0

Statistics

4

B

3. 0

College algebra

4

B

3. 0

12. The following temperatures were recorded in Pasadena for a week in April.

87, 85, 80, 78, 83, 86, 90

Calculate the mean and fill the table below

X

78

-6. 143

37. 736

80

-4. 143

17. 164

83

-1. 143

1. 306

85

0. 857

0. 734

86

1. 857

3. 448

87

2. 857

8. 162

90

5. 857

34. 306