

May 2019

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WEEK 3: HOMEWORK

Started: Jun 20 at 3:28pm

QUIZ INSTRUCTIONS

Click the button to start the homework set. You can re-do this assignment as often as you need. Be sure to have the Week 3 spreadsheet available to help with the calculations. It is available in the [Week 3 Resources](#) page.

QUESTIONS

- Question 1
- Question 2
- Question 3
- Question 4
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Time Elapsed: [Hide](#)
 Attempt due: May 27 at 12:59am
 0 Minutes, 24 Seconds

Question 1 2 pts

Let x represent the number of pets in pet stores. This would be considered what type of variable:

Homework Help:
[3DA Discrete versus continuous variables](#) (DOCX)

Nonsensical
 Discrete
 Continuous
 Lagging

Question 2 2 pts

Let x represent sheets of paper in a package. This would be considered what type of variable:

Homework Help:
[3DA Discrete versus continuous variables](#) (DOCX)

Continuous
 Discrete
 Inferential
 Distributed

Question 3 2 pts

Consider the following table.

Age Group	Frequency
18-29	9831
30-39	7845
40-49	6869
50-59	6323
60-69	5410
70 and over	5279

If you created the probability distribution for these data, what would be the probability of 40-49?

Homework Help:
[3DB Probabilities from a probability distribution](#) (DOCX)

16.5%
 18.9%
 23.7%
 42.5%

Question 4 2 pts

Consider the following table.

Weekly hours worked	Probability
1-30 (average=22)	0.08
31-40 (average=35)	0.41
41-50 (average=46)	0.47
51 and over (average=61)	0.04

Find the mean of this variable.

Homework Help:
[3VA Calculating the mean, variance, and standard deviation of discrete variables](#) (4.35)
[3DC Mean, expected value, variance, and standard deviation of discrete variables](#) (DOCX)

39.0
 40.2
 35.9
 41.0

Question 5 2 pts

Consider the following table.

Defects in batch	Probability
0	0.28
1	0.35
2	0.16
3	0.09
4	0.10
5	0.02

Find the variance of this variable.

Homework Help:

[3VA. Calculating the mean, variance, and standard deviation of discrete variables](#) (4.35)

[3DC. Mean, expected value, variance, and standard deviation of discrete variables](#) (DOCX)

- 1.44
- 0.85
- 1.35
- 1.83

Question 6 2 pts

Consider the following table.

Defects in batch	Probability
2	0.35
3	0.23
4	0.20
5	0.09
6	0.07
7	0.06

Find the standard deviation of this variable.

Homework Help:

[3VA. Calculating the mean, variance, and standard deviation of discrete variables](#) (4.35)

[3DC. Mean, expected value, variance, and standard deviation of discrete variables](#) (DOCX)

- 1.51
- 2.27
- 4.50
- 3.48

Question 7 2 pts

The standard deviation of the number of video game A's outcomes is 0.5479, while the standard deviation of the number of video game B's outcomes is 0.2498. Which game would you be likely to choose if you wanted players to have the most choice and why?

Homework Help:

[3DD. Interpreting and comparing discrete variable standard deviations](#) (DOCX)

- Game A, as the standard deviation is lower and, thus offers more choices in outcomes
- Game B, as the standard deviation is lower and, thus offers fewer choices in outcomes
- Game A, as the standard deviation is higher and, thus offers more choices in outcomes
- Game B, as the standard deviation is higher and, thus offers fewer choices in outcomes

Question 8 2 pts

Thirty-five percent of teens buy soda (pop) at least once each week. Eleven kids are randomly selected. The random variable represents the number of these kids who purchase soda (pop) at least once each week. For this to be a binomial experiment, what assumption needs to be made?

Homework Help:

[3DE. Definitions, assumptions and elements \(n, x, p\) of binomial experiments](#) (DOCX)

- All the kids eligible to be selected are teens
- The probability of being a teen and being a kid should be the same
- All eleven kids selected live in the same region
- All teens have the same probability of being selected

Question 9 2 pts

A survey found that 31% of all teens buy soda (pop) at least once each week. Seven teens are randomly selected. The random variable represents the number of teens who buy soda (pop) at least once each week. What is the value of n?

Homework Help:

[3DE. Definitions, assumptions and elements \(n, x, p\) of binomial experiments](#) (DOCX)

- x, the counter
- 0.07
- 0.31
- 7

Question 10 2 pts

Forty-four percent of US adults have little confidence in their cars. You randomly select twelve US adults. Find the probability that the number of US adults who have little confidence in their cars is (1) exactly six and then find the probability that it is (2) more than 7.

Homework Help:

[3VB. Calculating binomial probabilities and cumulative probabilities](#) (8.23)

[3DF. Binomial probabilities versus cumulative probabilities](#) (DOCX)

- (1) 0.793 (2) 0.099
- (1) 0.207 (2) 0.901
- (1) 0.782 (2) 0.901
- (1) 0.207 (2) 0.099

Question 11 2 pts

Say a business wants to know if each salesperson is equally likely to make a sale. The company chooses 5 salespeople and gathers information on their sales experiences. What assumption must be made for this study's probability results to be used in future binomial experiments?

Homework Help:

[3DE: Definitions, assumptions and elements \(n, x, p\) of binomial experiments](#) (DOCX)

- That the probability of each salesperson being one of the selected 5 is the same
- That for every 5 salespeople, the probability of making a sale is the same
- That 5% is the correct probability to use in future studies
- That the selected 5 have similar characteristics and sales areas as the other salespeople

Question 12 2 pts

Eight baseballs are randomly selected from the production line to see if their stitching is straight. Over time, the company has found that 93.8% of all their baseballs have straight stitching. If exactly six of the eight have straight stitching, should the company stop the production line?

Homework Help:

[3VC: Using binomials to assess quality of production](#) (3.08)

- Yes, the probability of six or more having straight stitching is unusual
- Yes, the probability of exactly six having straight stitching is unusual
- No, the probability of exactly six have straight stitching is not unusual
- No, the probability of six or more having straight stitching is not unusual

Question 13 2 pts

A soup company puts 20 ounces of soup in each can. The company has determined that 97% of cans have the correct amount. Which of the following describes a binomial experiment that would determine the probability that a case of 24 cans has all cans that are properly filled?

Homework Help:

[3DE: Definitions, assumptions and elements \(n, x, p\) of binomial experiments](#) (DOCX)

- $n=20, p=0.97, x=20$
- $n=24, p=0.97, x=1$
- $n=24, p=0.97, x=24$
- $n=20, p=0.97, x=20$

Question 14 2 pts

A supplier must create metal rods that are 18.1 inches long to fit into the next step of production. Can a binomial experiment be used to determine the probability that the rods are correct length or an incorrect length?

Homework Help:

[3VC: Using binomials to assess quality of production](#) (3.08)

[3DE: Definitions, assumptions and elements \(n, x, p\) of binomial experiments](#) (DOCX)

- No, as there are three possible outcomes, rather than two possible outcomes
- No, as the probability of being about right could be different for each rod selected
- Yes, as each rod measured would have two outcomes: correct or incorrect
- Yes, all production line quality questions are answered with binomial experiments

Question 15 2 pts

In a box of 12 pens, there is one that does not work. Employees take pens as needed. The pens are not returned, once taken. You are the 5th employee to take a pen. Is this a binomial experiment?

Homework Help:

[3VC: Using binomials to assess quality of production](#) (3.08)

[3DE: Definitions, assumptions and elements \(n, x, p\) of binomial experiments](#) (DOCX)

- Yes, the probability of success is one out of 12 with 5 selected
- No, the probability of getting the broken pen changes as there is no replacement
- No, binomial does not include systematic selection such as "fifth"
- Yes, you are finding the probability of exactly 5 not being broken

Question 16 2 pts

Forty-two percent of employees make judgements about their co-workers based on the cleanliness of their desk. You randomly select 7 employees and ask them if they judge co-workers based on this criterion. The random variable is the number of employees who judge their co-workers by cleanliness. Which outcomes of this binomial distribution would be considered unusual?

Consuereu unusual

Homework Help:

[3VD Finding unusual outcomes from a probability distribution](#) (2:32)

- 1, 6, 7
- 1, 2, 6, 7
- 0, 6, 7
- 0, 1, 2, 7

Question 17 2 pts

Eighty-one percent of products come off the line within product specifications. Your quality control department selects 15 products randomly from the line each hour. Looking at the binomial distribution, if fewer than how many are within specifications would require that the production line be shut down (unusual) and repaired?

Homework Help:

[3VD Finding unusual outcomes from a probability distribution](#) (2:32)

- Fewer than 12
- Fewer than 9
- Fewer than 11
- Fewer than 10

Question 18 2 pts

The probability of a potential employee passing a drug test is 86%. If you selected 12 potential employees and gave them a drug test, how many would you expect to pass the test?

Homework Help:

[3DC Mean, expected value, variance, and standard deviation of discrete variables](#) (DOCX)

- 11 employees
- 10 employees
- 9 employees
- 8 employees

Question 19 2 pts

The probability of a potential employee passing a training course is 86%. If you selected 15 potential employees and gave them the training course, what is the probability that more than 12 will pass the test?

Homework Help:

[3VB Calculating binomial probabilities and cumulative probabilities](#) (8:23)

- 0.852
- 0.900
- 0.648
- 0.352

Question 20 2 pts

Off the production line, there is a 3.7% chance that a candle is defective. If the company selected 45 candles off the line, what is the probability that fewer than 3 would be defective?

Homework Help:

[3VB Calculating binomial probabilities and cumulative probabilities](#) (8:23)

- 0.768
- 0.975
- 0.916
- 0.037

10/10

No new data to save. Last checked at 3:29pm

Submit Quiz

