

Examrace

Statistics MCQs – Tests for Qualitative Data Part 2

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21. A manufacturer of toothpaste wishes to do a market survey on four new flavours of toothpaste to determine whether customers have a specific preference for one flavour or whether all flavours are equally well liked by customers. The four new flavours are: lemon, strawberry, peppermint and orange. 200 customers are each given a sample of all of the new flavours and are asked to state their favourite flavour. 39 customers state that they prefer the lemon flavour, 67 the strawberry flavour, 39 the peppermint flavour and 55 the orange flavour. What is the test statistic value for the hypothesis test in this case?

- a. 8.72
- b. 7.44
- c. 8.08
- d. 11.10
- e. 9.48

Answer: D

22. A manufacturer of toothpaste wishes to do a market survey on four new flavours of toothpaste to determine whether customers have a specific preference for one flavour or whether all flavours are equally well liked by customers. The four new flavours are: lemon, strawberry, peppermint and orange. 200 customers are each given a sample of all of the new flavours and are asked to state their favourite flavour. 45 customers state that they prefer the lemon flavour, 48 the strawberry flavour, 39 the peppermint flavour and 68 the orange flavour. What is the test statistic value for the hypothesis test in this case?

- a. 8.72
- b. 7.44
- c. 8.08
- d. 11.10
- e. 9.48

Answer: E

23. According to a manufacturer of N&N sweets, the distribution of colours of N&N's in a typical bag of sweets is as follows: 20 % blue, 20 % brown, 20 % yellow, 20 % red, 10 % green and 10 % orange. To test this claim we bought a bag of N&N's on campus and counted the different colours. Of the 100 N&N's in total there were 23 blue, 17 brown, 20 yellow, 18 red, 12 green, and 10 orange. What is the value of the test statistic of the appropriate hypothesis test to be used to test the manufacturer's claim?

- a. 1.5
- b. 5.7
- c. 7.5
- d. 6.9
- e. 23.1

Answer: A

24. According to a manufacturer of N&N sweets, the distribution of colours of N&N's in a typical bag of sweets is as follows: 20 % blue, 20 % brown, 20 % yellow, 20 % red, 10 % green and 10 % orange. To test this claim we bought a bag of N&N's on campus and counted the different colours. Of the 100 N&N's in total there were 23 blue, 26 brown, 16 yellow, 21 red, 9 green, and 5 orange. What is the value of the test statistic of the appropriate hypothesis test to be used to test the manufacturer's claim?

- a. 1.5
- b. 5.7
- c. 7.5
- d. 6.9
- e. 23.1

Answer: B

25. According to a manufacturer of N&N sweets, the distribution of colours of N&N's in a typical bag of sweets is as follows: 20 % blue, 20 % brown, 20 % yellow, 20 % red, 10 % green and 10 % orange. To test this claim we bought a bag of N&N's on campus and counted the different colours. Of the 100 N&N's in total there were 29 blue, 13 brown, 20 yellow, 18 red, 12 green, and 8 orange. What is the value of the test statistic of the appropriate hypothesis test to be used to test the manufacturer's claim?

- a. 1.5
- b. 5.7
- c. 7.5
- d. 6.9

e. 23.1

Answer: C

26. According to a manufacturer of N&N sweets, the distribution of colours of N&N's in a typical bag of sweets is as follows: 20 % blue, 20 % brown, 20 % yellow, 20 % red, 10 % green and 10 % orange. To test this claim we bought a bag of N&N's on campus and counted the different colours. Of the 100 N&N's in total there were 23 blue, 11 brown, 26 yellow, 18 red, 12 green, and 10 orange. What is the value of the test statistic of the appropriate hypothesis test to be used to test the manufacturer's claim?

a. 1.5

b. 5.7

c. 7.5

d. 6.9

e. 23.1

Answer: D

27. According to a manufacturer of N&N sweets, the distribution of colours of N&N's in a typical bag of sweets is as follows: 20 % blue, 20 % brown, 20 % yellow, 20 % red, 10 % green and 10 % orange. To test this claim we bought a bag of N&N's on campus and counted the different colours. Of the 100 N&N's in total there were 12 blue, 17 brown, 15 yellow, 18 red, 16 green, and 22 orange. What is the value of the test statistic of the appropriate hypothesis test to be used to test the manufacturer's claim?

a. 1.5

b. 5.7

c. 7.5

d. 6.9

e. 23.1

Answer: E

28. According to data from a previous census, the South African population is made up of 79 % African people, 10 % Coloured people, 3 % Indian people and 8 % White people. We wish to test whether race data from the most recent census conforms to this pattern. The census records of 150 people are examined. 125 are found to be African, 10 are found to be Coloured, 6 are Indian and 9 are White. What is the test statistic of the goodness-of-fit test in this case?

a. 3.3

b. 11.5

- c. 10.2
- d. 5.1
- e. 12.7

Answer: A

29. According to data from a previous census, the South African population is made up of 79 % African people, 10 % Coloured people, 3 % Indian people and 8 % White people. We wish to test whether race data from the most recent census conforms to this pattern. The census records of 150 people are examined. 125 are found to be African, 18 are found to be Coloured, 6 are Indian and 1 is White. What is the test statistic of the goodness-of-fit test in this case?

- a. 3.3
- b. 11.5
- c. 10.2
- d. 5.1
- e. 12.7

Answer: B

30. According to data from a previous census, the South African population is made up of 79 % African people, 10 % Coloured people, 3 % Indian people and 8 % White people. We wish to test whether race data from the most recent census conforms to this pattern. The census records of 150 people are examined. 131 are found to be African, 10 are found to be Coloured, 6 are Indian and 3 are White. What is the test statistic of the goodness-of-fit test in this case?

- a. 3.3
- b. 11.5
- c. 10.2
- d. 5.1
- e. 12.7

Answer: C

31. According to data from a previous census, the South African population is made up of 79 % African people, 10 % Coloured people, 3 % Indian people and 8 % White people. We wish to test whether race data from the most recent census conforms to this pattern. The census records of 150 people are examined. 125 are found to be African, 10 are found to be Coloured, 1 is Indian and 14 are White. What is the test statistic of the goodness-of-fit test in this case?

- a. 3.3
- b. 11.5
- c. 10.2
- d. 5.1
- e. 12.7

Answer: D

32. According to data from a previous census, the South African population is made up of 79 % African people, 10 % Coloured people, 3 % Indian people and 8 % White people. We wish to test whether race data from the most recent census conforms to this pattern. The census records of 150 people are examined. 111 are found to be African, 10 are found to be Coloured, 6 are Indian and 23 are White. What is the test statistic of the goodness-of-fit test in this case?

- a. 3.3
- b. 11.5
- c. 10.2
- d. 5.1
- e. 12.7

Answer: E

33. In rolling a dice 300 times we get 57 ones, 62 twos, 41 threes, 47 fours, 53 fives and 40 sixes. We wish to determine whether the dice is fair. What is the test statistic value for the goodness-of-fit test in this case?

- a. 7.8
- b. 3.6
- c. 10.1
- d. 13.6
- e. 6.6

Answer: A

34. In rolling a dice 300 times we get 57 ones, 55 twos, 41 threes, 47 fours, 53 fives and 47 sixes. We wish to determine whether the dice is fair. What is the test statistic value for the goodness-of-fit test in this case?

- a. 7.8
- b. 3.6

- c. 10.1
- d. 13.6
- e. 6.6

Answer: B

35. In rolling a dice 300 times we get 57 ones, 62 twos, 48 threes, 47 fours, 53 fives and 33 sixes. We wish to determine whether the dice is fair. What is the test statistic value for the goodness-of-fit test in this case?

- a. 7.8
- b. 3.6
- c. 10.1
- d. 13.6
- e. 6.6

Answer: C

36. In rolling a dice 300 times we get 57 ones, 62 twos, 41 threes, 31 fours, 53 fives and 56 sixes. We wish to determine whether the dice is fair. What is the test statistic value for the goodness-of-fit test in this case?

- a. 7.8
- b. 3.6
- c. 10.1
- d. 13.6
- e. 6.6

Answer: D

37. In rolling a dice 300 times we get 57 ones, 62 twos, 41 threes, 47 fours, 50 fives and 43 sixes. We wish to determine whether the dice is fair. What is the test statistic value for the goodness-of-fit test in this case?

- a. 7.8
- b. 3.6
- c. 10.1
- d. 13.6
- e. 6.6

Answer: E

38. A manufacturer of toothpaste wishes to do a market survey on four new flavours of toothpaste to determine whether customers have a specific preference for one flavour or whether all flavours are equally well liked by customers. The four new flavours are: lemon, strawberry, peppermint and orange. 200 customers are each given a sample of all of the new flavours and are asked to state their favourite flavour. 45 customers state that they prefer the lemon flavour, 67 the strawberry flavour, 39 the peppermint flavour and 49 the orange flavour. The test statistic value for the hypothesis test in this case is 8.72. Which of the following is the most correct conclusion for the test?

- a. the null hypothesis can be rejected at the 5 % level of significance and we can conclude that preferences for the new toothpaste flavours differ
- b. the null hypothesis cannot be rejected at the 5 % level of significance and we can conclude that preferences for the new toothpaste flavours differ
- c. the null hypothesis can be rejected at the 2.5 % level of significance and we can conclude that preferences for the new toothpaste flavours differ
- d. the null hypothesis can be rejected at the 10 % level of significance and we can conclude that preferences for the new toothpaste flavours differ
- e. the null hypothesis can be rejected at the 1 % level of significance and we can conclude that preferences for the new toothpaste flavours differ

Answer: A

39. A manufacturer of toothpaste wishes to do a market survey on four new flavours of toothpaste to determine whether customers have a specific preference for one flavour or whether all flavours are equally well liked by customers. The four new flavours are: lemon, strawberry, peppermint and orange. 200 customers are each given a sample of all of the new flavours and are asked to state their favourite flavour. 45 customers state that they prefer the lemon flavour, 51 the strawberry flavour, 39 the peppermint flavour and 65 the orange flavour. The test statistic value for the hypothesis test in this case is 7.44. Which of the following is the most correct conclusion for the test?

- a. the null hypothesis can be rejected at the 5 % level of significance and we can conclude that preferences for the new toothpaste flavours differ
- b. the null hypothesis cannot be rejected at the 5 % level of significance and we can conclude that preferences for the new toothpaste flavours differ
- c. the null hypothesis can be rejected at the 2.5 % level of significance and we can conclude that preferences for the new toothpaste flavours differ
- d. the null hypothesis can be rejected at the 10 % level of significance and we can conclude that preferences for the new toothpaste flavours differ
- e. the null hypothesis can be rejected at the 1 % level of significance and we can conclude that preferences for the new toothpaste flavours differ

Answer: D

40. A manufacturer of toothpaste wishes to do a market survey on four new flavours of toothpaste to determine whether customers have a specific preference for one flavour or whether all flavours are equally well liked by customers. The four new flavours are: lemon, strawberry, peppermint and orange. 200 customers are each given a sample of all of the new flavours and are asked to state their favourite flavour. 45 customers state that they prefer the lemon flavour, 67 the strawberry flavour, 47 the peppermint flavour and 41 the orange flavour. The test statistic value for the hypothesis test in this case is 8.08. Which of the following is the most correct conclusion for the test?

- a. the null hypothesis can be rejected at the 5 % level of significance and we can conclude that preferences for the new toothpaste flavours differ
- b. the null hypothesis cannot be rejected at the 5 % level of significance and we can conclude that preferences for the new toothpaste flavours differ
- c. the null hypothesis can be rejected at the 2.5 % level of significance and we can conclude that preferences for the new toothpaste flavours differ
- d. the null hypothesis can be rejected at the 10 % level of significance and we can conclude that preferences for the new toothpaste flavours differ
- e. the null hypothesis can be rejected at the 1 % level of significance and we can conclude that preferences for the new toothpaste flavours differ

Answer: A

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