Understanding Tests of Proportions
Quiz, 18 questions

18/18 points (100%)

✓ **Congratulations! You passed!**

Next Item

✓ 1 / 1
point

1.
If your *Subject* column is filled with numbers, why is it good practice to recode it using the "factor" function?

○ The *Subject* column is a nominal factor, not a numeric one, despite sometimes being encoded as a number.

○ The *Subject* column is a categorical factor, not a numeric one, despite sometimes being encoded as a number.

○ The *Subject* column is a nominal factor, not a scalar one, despite sometimes being encoded as a number.

○ The *Subject* column is a categorical factor, not a scalar one, despite sometimes being encoded as a number.

◉ All of the above.

▲

Correct

✓ 1 / 1
point

2.
Which of the following variable type names are grouped with synonyms? (Mark all that apply.)

☑ Categorical, nominal, factor

▲

Correct

☑ Ordinal, ordered

▲

Correct

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Numeric, continuous, scalar

Correct

☐   Numeric, ordinal, factor

Un-selected is correct

☐   Categorical, binomial, scalar

Un-selected is correct

✔   1 / 1
point

3.

What is the correct R command for viewing preference proportions?

◯
```
1   plot(data$Pref)
```

Correct

◯
```
1   boxplot(data$Pref)
```

◯
```
1   plot(data$Subject)
```

◯
```
1   boxplot(data$Subject)
```

◯   None of the above.

---

1 / 1

point

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Which of the following is the most precise way of saying what a one-sample test of proportions tell us?

○ Whether the proportions of counts in each response category are significantly different.

○ Whether the proportions of counts across the response categories are significantly different from each other.

◉ Whether any of the proportions of counts in each response category are significantly different from chance.

▲

Correct

○ Whether any of the proportions of counts in each response category are significantly different from each other.

○ None of the above.

✔ 1 / 1 point

5.

Which of the following is the most proper way to report a Chi-Square test result?

○ $\chi^2(1,20) = 4.12$, $p<.05$

○ $\chi^2(1,20) = 4.12$, $p=.04$

◉ $\chi^2(1, N=20) = 4.12$, $p<.05$

▲

Correct

○ $\chi^2(1, N=20) = 4.12$, $p=.04$

○ None of the above.

✔ 1 / 1 point

6.

What does "n.s." mean in place of a p-value?

◉ Non-significant

▲

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Correct

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○   Not statistical

○   Insignificant

○   No significato

○   Not shown

✓   1 / 1
point

7.

Which of the following best describes the main purpose for which we employ inferential statistical tests?

○   With statistical tests, we can prove that two things are different.

○   With statistical tests, we can prove that two things are equal.

◉   With statistical tests, we can provide evidence that two things are different.

Correct

○   With statistical tests, we can provide evidence that two things are not detectably different.

○   With statistical tests, we can prove that two things are not detectably different.

✓   1 / 1
point

8.

As opposed to an asymptotic test, what does an exact test compute?

◉   An exact p-value

Correct

○   An exact Chi-Square value

○   An exact degrees of freedom

○   An exact binomial value

◯ None of the above.

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✔ 1 / 1
point

9.

The binomial test is used in tests of proportions with two response categories.

◯ True
▲

Correct

◯ False

✔ 1 / 1
point

10.

The multinomial test generalizes the binomial test to more than two response categories.

◯ True
▲

Correct

◯ False

✔ 1 / 1
point

11.

For a one-sample test of proportions with four response categories, what would be the R vector of probabilities representing <u>no</u> significant preference (*i.e.*, lack of any detectable preference) for any of the categories?

◯
```
1   c(1/4, 1/4, 1/4)
```

◯
```
1   c(1/3, 1/3, 1/3)
```

◯

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```
1   c(1/2, 1/4, 1/4)
```

○
```
1   c(1/2, 1/2)
```

◉
```
1   c(1/4, 1/4, 1/4, 1/4)
```

Correct

✔   1 / 1
     point

12.

An omnibus test is when two levels of a three-level factor are directly compared.

○ True

◉ False

Correct

✔   1 / 1
     point

13.

Which of the following are true statements about *post hoc* tests? (Mark all that apply.)

☑ They are only justified after a significant overall test.

Correct

☑ They are only justified after a significant omnibus test.

Correct

☑ They can compare specific levels of a factor.

Correct
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☐ They are often pairwise comparisons, pitting one level of a factor against another.

▲

Correct

☐ They may be performed with a different statistical test than was used by the omnibus test.

▲

Correct

✔ 1 / 1
   point

14.

Which is the best explanation for *post hoc* adjustments and why they are necessary?

○ *Post hoc* adjustments are adjustments to *p*-values designed to make them bigger.

○ *Post hoc* adjustments are adjustments for multiple comparisons designed to improve the chances of finding statistical significance.

◉ *Post hoc* adjustments are adjustments for multiple comparisons designed to reduce the chances of incorrectly finding statistical significance, also known as a Type I error.

▲

Correct

○ *Post hoc* adjustments are adjustments for multiple comparisons designed to reduce the chances of incorrectly failing to find statistical significance, also known as a Type II error.

○ *Post hoc* adjustments are adjustments to *p*-values designed to make them smaller.

✔ 1 / 1
   point

15.

The *post hoc* adjustment indicated with "holm" in R stands for what?

○ The Bonferroni correction

○ The Holm-Bonferroni school of statistical thought

○ Holm's statistical test

○

Holm's sequential Bonferroni procedure
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Correct

◯   None of the above.

✓   1 / 1
       point

16.
Which of the following indicate <u>two-sample</u> proportions? (Mark all that apply.) Hint: Do not confuse the
number of samples with the number of categories *within* a sample. The number of categories within a
sample has no bearing on the number of samples one has in the first place.

☐   Users' choices among three options by sex
▲

Correct

☐   Users' choices among two options
▲

Un-selected is correct

☐   Users' choices among three options, then take the top two, and then users' choices between
       those two options
▲

Un-selected is correct

☐   Users' choices among three options by citizenship
▲

Correct

☐   Users' choices among two options by sex and by citizenship
▲

Un-selected is correct

✓   1 / 1
       point

17.
Which of the following are tests of proportions reviewed in lecture? (Mark all that apply.)

☐ Chi-Square test

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Correct

☐ A/B test

▲

Un-selected is correct

☐ Binomial test

▲

Correct

☐ *G*-test

▲

Correct

☐ Friedman test

▲

Un-selected is correct

✔ 1 / 1
point

18.
The *G*-test can be thought of as a newer version of essentially which asymptotic test?

○ Chi-Square test

▲

Correct

○ A/B test

○ Binomial test

○ *t*-test

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