⚠️ **Try again once you are ready**

Grade	Latest Submission	To pass 80% or	
received 75%	Grade 75%	higher	**Try again**

1. Which of the following statements accurately describe the null hypothesis? Select all that apply.   `1 / 1 point`

☑ The null hypothesis is assumed to be true unless there is convincing evidence to the contrary.

✓ **Correct**

☐ The null hypothesis is accepted as true only if there is convincing evidence for it.

☐ The null hypothesis typically assumes that observed data does not occur by chance.

☑ The null hypothesis typically assumes that observed data occurs by chance.

✓ **Correct**

2. What does the concept of p-value refer to?   `0 / 1 point`

◉ The probability of rejecting the null hypothesis when it is true

○ The probability of observing results less extreme than those observed when the null hypothesis is true

○ The probability of observing results as or more extreme than those observed when the null hypothesis is true

○ The probability of rejecting the null hypothesis when it is false

✕ **Incorrect**
Review the video that introduces hypothesis testing 🔗.

3. When would a data professional reject the null hypothesis?   `1 / 1 point`

○ When their test statistic is less than their p-value

○ When their p-value is less than their test statistic

○ When their significance level is less than their p-value

◉ When their p-value is less than their significance level

✓ **Correct**

4. A data professional conducts a hypothesis test. When they draw their conclusion, they commit a type I error. Which of the following statements describe their error? Select all that apply.   `1 / 1 point`

☐ They fail to reject a null hypothesis that is actually false.

☐ They conclude their result occurred by chance when in fact it is statistically significant.

☑ They conclude their result is statistically significant when in fact it occurred by chance.

✓ **Correct**

☑ They reject a null hypothesis that is actually true.

✓ **Correct**

5. A data professional on a marketing team conducts a hypothesis test to compare the mean time customers spend on two different versions of a company's website. To start, they state the null hypothesis and the alternative hypothesis. What should they do next?   `1 / 1 point`

○ Reject or fail to reject the null hypothesis

◉ Choose a significance level

○ Find the margin of error

○ Find the p-value

✓ **Correct**

6. A data professional conducts a hypothesis test. They choose a significance level of 1%. They calculate a p-value of 0.01%. What conclusion should they draw?

1 / 1 point

○ Reject the alternative hypothesis.

○ Fail to reject the alternative hypothesis.

◉ Reject the null hypothesis.

○ Fail to reject the null hypothesis.

⊘ **Correct**

7. A data professional is conducting a hypothesis test. Their null hypothesis states that there is no difference between two population proportions. What type of test are they conducting?

0 / 1 point

○ Two-sample z-test

◉ Two-sample t-test

○ One-sample z-test

○ One-sample t-test

⊗ **Incorrect**
Review the video about two-sample tests for proportions ↗.

8. A data professional conducts a hypothesis test to compare the mean annual sales of two different restaurants in the same restaurant chain. They write the following code:

1 / 1 point

```
scipy.stats.ttest_ind(a=530, b=550, equal_var=FALSE)
```

What does the argument `a=530` refer to?

○ P-value

○ Whether or not the population variance of the two samples is assumed to be equal

○ Significance level

◉ Observations from the first sample

⊘ **Correct**