* **Hypothesis statement**

**(the null hypothesis)**

* a statement that is **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**until proven otherwise.

**(the ­\_\_\_\_\_\_\_\_\_\_\_\_\_ hypothesis)**

* a statement about the parameter that \_\_\_\_\_\_\_\_\_\_ be true if the null hypothesis is false.
* is a statement that we \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* **Types of tests**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Example:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Example:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Example:

* **Rejection Region**

**Rejection region:** The set of test statistic values for which we would \_\_\_\_\_\_\_\_ the \_\_\_\_\_\_ hypothesis.

**Non-rejection region:** The set of test statistic values for which we should \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Critical value**: the boundary between the rejection region and the non-rejection region.

**Significance level** : The size of the rejection region equals to .

* **P-Value**

Assuming *H0* is true, the probability that the statistic would take a value \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the one actually observed is called the ***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*** of the test.

* **Significance level ( \_\_\_\_\_\_ )**

If the *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*, we say that the data are **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**. In that case, we \_\_\_\_\_\_\_\_ the null hypothesis *H0* and conclude that there is convincing evidence in favor of the alternative hypothesis *Ha* .

* **Exam Tips:**

**State:** Statethe hypotheses, significance level, and define your parameters

**Plan:** Name your inference method and check conditions

**Do:** Perform calculations (if conditions met), report the test statistic and the p-value

**Conclude:** Reject or fail to reject and justify (context)

* Because our p-value (\_\_\_\_) is **less/greater** than our alpha level (\_\_\_), we **reject / fail to reject** . We **do/don’t** have convincing evidence that ( in context).
* **Type 1 error & Type 2 error**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | Reality | |
|  |  |  |  |
| Decision |  |  |  |
|  |  |  |

Type I error:

Type II error:

Power:

* **Practice**





