**Hypothesis Testing - Terminology**

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| **Term** | **Example** | **Definition** |
| Null  Hypothesis | * “Dave did not commit the crime” * “The drug does not have any effect” | The proposal that *everything is normal* or that *the thing you say is true*. |
| Alternate Hypothesis | * “Dave committed the crime” * “The drug does have an effect” | The proposal that *everything is not normal* or that *the thing you say is false*. |
| One tailed test | * “The drugs have a positive effect” | A test which involves testing only one end of a distribution. |
| Two tailed test | * “The drugs have an effect, be it positive or negative” | A test which involves testing both ends of a distribution. |
| Test Statistic |  | The parameter of the distribution on which the test is to be conducted, often based on . |
| Significance Level | (5% significance level on a two tailed test is 2.5% at either end of the distribution) | The probability of the test statistic appearing in the critical region and, therefore…  The probability of rejecting the null hypothesis when it may in fact be correct. |
| Critical Region | For a two tailed test, significance level ⇒ | The values of the test statistic which make up the tail(s) of the distribution as determined by the significance level.  The region and values beyond which we consider it too unlikely to have occurred naturally and under the null hypothesis. |
| Critical Value |  | The value of the sample statistic being compared to the critical region. |
| Type 1 error | * Concluding that Dave is guilty when he is in fact innocent. * A False positive. | Rejecting H0 (and accepting H1) when it is in fact correct. |
| Type 2 error | * Concluding that Dave is innocent when he is in fact guilty. | Accepting H0 (and rejecting H1) when it is in fact not true. |