*Session 4: Assignment 7*

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1. Introduction

This assignment will help you to consolidate the concepts learnt in the session.

1. Problem Statement

**Problem Statement 1:**

Blood glucose levels for obese patients have a mean of 100 with a standard deviation of

15. A researcher thinks that a diet high in raw cornstarch will have a positive effect on

blood glucose levels. A sample of 36 patients who have tried the raw cornstarch diet

have a mean glucose level of 108. Test the hypothesis that the raw cornstarch had an

effect or not.

**Note: Solution submitted via github must contain all the detailed steps.**

**3. Output:**

**Step 1**: State the Null Hypothesis: H0μ=100  
**Step 2**: State the Alternate Hypothesis: H1≠100  
**Step 3**: State Alpha Level as 0.05 for this.

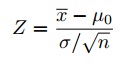
As this is a two-tailed test, split the alpha into two i.e. 0.05/2=0.025

**Step 4**: Find the **Z-score** associated with your Alpha level.

Look for the area in ***one tail only***. A z-score for 0.75(1-0.025=0.975) is **1.96**

As this is a two-tailed test, you would also be considering the left tail (**z=1.96**)

**Step 5:** Find the [test statistic](http://www.statisticshowto.com/test-statistic/) using this formula:



**Z = (140-100)/(15/√30)=14.60**

**Step 6**: If Step 5 is less than -1.96 or greater than 1.96 **(in Step 3)**, then reject the null hypothesis.

In this case, it is greater, so **Reject the null.**

\*This process is made much easier if you use a TI-83 or Excel to calculate the z-score (the “critical value”).  
See:

* [Critical z value TI 83](http://www.statisticshowto.com/critical-z-value-ti-83/)
* [Z Score in Excel](http://www.statisticshowto.com/probability-and-statistics/z-score/#ZExcel)