**Assignment 18.1**

# Problem Statement 1:

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

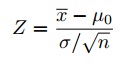
15. A researcher thinks that a diet high in raw cornstarch will have a positive effect on

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

Answer :

Step 1: [State the null hypothesis](http://www.statisticshowto.com/probability-and-statistics/null-hypothesis/#state): H0:μ=100  
Step 2: State the [alternate hypothesis](http://www.statisticshowto.com/what-is-an-alternate-hypothesis/): H1:≠100  
Step 3: State your [alpha level.](http://www.statisticshowto.com/what-is-an-alpha-level/) We’ll use 0.05 for this example. As this is a two-tailed test, split the alpha into two.  
0.05/2=0.025  
Step 4: Find the [z-score](http://www.statisticshowto.com/probability-and-statistics/z-score/) associated with your [alpha level](http://www.statisticshowto.com/what-is-an-alpha-level/). You’re looking 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: [](http://www.statisticshowto.com/wp-content/uploads/2014/02/z-score-formula.jpg)  
z=(108-100)/(15/√36)=3.2  
Step 6: If Step 5 is less than -1.96 or greater than 1.96 (Step 3), [reject the null hypothesis](http://www.statisticshowto.com/support-or-reject-null-hypothesis/). In this case, it is greater, so you *can* reject the null.