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

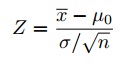
have a mean glucose level of 108. Test the hypothesis that the raw cornstarch had an

effect or not.

Solution:

Step 1: [The null hypothesis](http://www.statisticshowto.com/probability-and-statistics/null-hypothesis/#state): H0:μ=100  
Step 2: The [alternate hypothesis](http://www.statisticshowto.com/what-is-an-alternate-hypothesis/): H1:≠100  
Step 3: alpha = 0.05 for this problem.

Step 4:

[](http://www.statisticshowto.com/wp-content/uploads/2014/02/z-score-formula.jpg)  
z= (108-100)/(15/√36)=3.2

The P-value associated with the Z-value of 3.2 is 0.9993

This means that the probability of having a value less than 108 is 0.9993, while the probability of having a value equal to (or more than) 108 is (1- 0.9993), which is equal to 0.0007

Step 5: As the computed value of 0.0007 is less than the significance level of 0.05, the Null hypothesis test to determine the raw corn-starch effect can be rejected i.e. there is raw cornstarch effect.