1. **Define the null and alternative hypotheses in mathematical terms as well as in words**.  
     
   The QA process is trying to prove that the two lines are producing ball bearings similar accuracy to the specification of a diameter of 2.2 cm. They are doing so by evaluating the proportion of the population that are less than 2.2 cm. This suggests that the proportions, p1 and p2, ball bearings less than 2.2 inches per sample size, are the same across both lines. The null hypothesis is that they are the same and the alternative is that they are not.  
     
   *H0 : pline 1 = pline 2  
   Ha : pline 2 ≠ pline 2*
2. **Identify the level of significance.**  
     
   Significance is 5% (α = 0.5) or 95% confidence range.
3. **Include the test statistic and the P-value. See Step 2 in the Python script. (Note that Python methods return two tailed P-values. You must report the correct P-value based on the alternative hypothesis.)**  
     
   From the Python script:  
     
   test-statistic = -0.86  
   two tailed p-value = 0.3912  
     
   Because the hypothesis test is two tailed the p-value = P(z ≤ -0.86 or z ≥ 0.86) ≈ 0.3912
4. **Provide a conclusion and interpretation of the test: Should the null hypothesis be rejected? Why or why not?**  
     
   The null hypothesis should not be rejected since the p-value is greater than the significance level (0.3912 > 0.05). Because there is insufficient evidence that the population proportions for line 1 and 2 have dissimilar proportions of bearings below 2.2 cm the manufacturing team may not need to do further refinement.