Part 1

0 points possible (ungraded)

Crimson Laboratory is manufacturing a new, durable metal for customers to use in various projects. However, because molecular deformations in the metal are not uniform throughout the sheet prior to cutting, each final sheet of metal has a slightly different yield strength.

Crimson Laboratory's QA (Quality Assurance) department has randomly selected ten different samples of its newest metal to undergo a prolonged-stress test. Crimson uses a unique rating system that they developed to test their metals. The results of this test for each of the samples are as follows:

Test#	Unique Rating
Test1	0.0404
Test2	0.0445
Test3	0.0429
Test4	0.0449
Test5	0.0434
Test6	0.0438
Test7	0.0402
Test8	0.0407
Test9	0.0448
Test10	0.041

You have been hired to review this data. First, you are tasked with creating a 95% confidence interval for the mean of the data set using a t-distribution.

What is the upper limit of this confidence interval?

Write your answer as a number with at least four decimals.

0.0438

0.0438

What is the lower limit of this confidence interval?

Write your answer as a number with at least four decimals.

0.0415

0.0415

Submit You have used 1 of 3 attempts

Correct

Part 2

0 points possible (ungraded)

Customers are asking for metals that test above a unique rating of 0.043. Test if your new metal has a mean greater than 0.043.

H_0 : Your metal has a mean unique rating that is less than or equal to 0.043.

H_1 : Your metal has a mean unique rating that is greater than 0.043.

Using a t-test, what is the p-value of your sample?

Write your answer as a number with at least four decimals. If your answer is less than .0001 then enter 0.

0.7069

0.7069

The QA department requires that you be 95% sure that the metal achieves customer specifications. Given this constraint, would you reject your H_0?

Choose the correct answer.

- Reject H0: You can be 95% confident that customer specifications will be met with this metal.
- Fail to Reject H0: You are not 95% confident that customer specifications will be met with this metal.
- Accept H0: Customers will not like this new metal.

Submit You have used 2 of 3 attempts

Correct