

Week 12 — Classical hypothesis testing: Wednesday exit ticket

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Name: _____

Date: _____

Instructions

Work through each item below. Write your final response in the space provided. Show enough work that another reader can follow your reasoning.

1. Researchers test whether the **mean mercury level** in white croaker fish differs from the EPA reference of **0.5 ppm**. Software reports a one-sample t -test (mercury in ppm):

Quantity	Value
sample size n	15
sample mean	0.287 ppm
sample SD s	0.069
t statistic	-11.96
degrees of freedom	14
p -value	< 0.01

- (a) State H_0 and H_A for this test (use μ = true mean mercury).
- (b) Read the **test statistic** and **degrees of freedom** from the output. In one phrase, what does $t = -11.96$ say about where the sample mean sits relative to 0.5?
- (c) Using the p -value, state the **decision** at $\alpha = 0.05$.
- (d) Write a one-sentence conclusion in context.