

mean registered by each electrode is equal — Name _____

6. The following data are results of analysis of a 10 ppm Ca^{2+} standard using three different ion-specific electrodes measuring the standard 9 times each. The One-way ANOVA results are below.

- a. What is H_0 ? *There is no relationship between using 3 different electrodes and measurements (Ca^{2+} analysis).*
- b. Can H_0 be rejected? Why? *NO, because $F = 0.037 < F_{\text{critical}} = 3.4$ also $P\text{-value} = 0.96 > 0.05$ non rejection region = high value of P , we do not reject the null hypothesis.*
- c. Which electrode has the worst (highest) variance?

Electrode 1	Electrode 2	Electrode 3
9.9	9.9	9.4
10.1	9.9	9.6
10.2	10	10.1
9.8	10	9.9
9.5	10.1	9.8
9.4	10.1	10.1
10	10	10.2
10.2	9.9	10.3
10.4	9.8	10

$E_1 = E_2 = E_3 ; H_0$
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Anova: Single Factor

Groups	Count	Sum	Average	Variance
Electrode 1	9	89.5	9.944444	0.110278
Electrode 2	9	89.7	9.966667	0.01
Electrode 3	9	89.4	9.933333	0.085

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.005185	2	0.002593	0.037889	0.962877	3.402832
Within Groups	1.642222	24	0.068426			
Total	1.647407	26				

*0.9 > 0.5
don't reject.*

10 ppm Calcium ion analysis.

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