

Name:

Quiz 18, Attempt 1

Suppose a researcher does 100 tests, rejecting null hypotheses when the p-value is below 5%. If all null hypotheses are true and all tests are independent, what is the probability that s/he erroneously rejects 1 or more of the null hypotheses?

$$1 - P(\text{Reject none} \mid H_0 \text{ all true}) = 1 - (.95)^{100}$$

If the researcher were using the Bonferroni adjustment, s/he would reject a null hypothesis only if the p-value were below what threshold?

$$\frac{0.05}{100}$$

Quiz 16, Attempt 2

Five students take an IQ test. Three subjects were on placebo and two were on NZT when taking the test. Their scores are reported below. Use a non-parametric analog of the two-sample t-test in order to determine if NZT improves IQ. Specifically, test the null hypothesis that the distributions are identical against a **one-sided** alternative that IQ tends to be higher on NZT.

NZT	118 (5)	107 (3)	
Placebo	108 (4)	105 (2)	89 (1)

$$W_{NZT} = 8$$

1	2	3	4	5	T
+	+				3
+		+			4
+			+		5
+				+	6
	+	+			5
	+		+		6
	+			+	7
		+	+		7
		+		+	(8)
			+	+	9

$$p\text{-value} = \frac{2}{10} = \frac{1}{5}$$