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What dataset are you working with: fifa\_audience

List 3 questions that you can ask with your dataset.

**Q1:** Are the TV audiences for the CONCACAF confederation countries different than the UEFA confederation countries?

**Q2:** Are the GDP shares for the CONCACAF confederation countries different than the UEFA confederation countries?

**Q3:** Are the TV audiences for the CONCACAF, UEFA, and AFC countries different?

List the associated null hypothesis for each question:

**Q1:** The TV audiences for CONCACAF countries and UEFA countries are the same.

**Q2:** The GDP shares for CONCACAF countries and UEFA countries are the same.  
**Q3:** The TV audiences for CONCACAF, UEFA, and AFC countries are the same.

What statistical test(s) will you use to answer each of the questions:

Q1: T-Test

Q2: T-Test

Q3: One-Way Anova

Make a visual plot showing the relationship that you will analyze statistically (e.g. boxplot for t-test or ANOVA; scatterplot for regression; table for chi-square).

**Q1:** boxplot(CONCACAF$tv\_audience\_share, UEFA$tv\_audience\_share)



**Q2:** boxplot(CONCACAF$gdp\_weighted\_share, UEFA$gdp\_weighted\_share)



**Q3:** boxplot(CONCACAF$tv\_audience\_share, UEFA$tv\_audience\_share, AFC$tv\_audience\_share)

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Do your data meet the assumptions required for the statistical test you want to run? Please state the assumptions you examined and whether or not your data meet those assumptions:

**Q1:** equal variances – var.test shows they are; normal distribution – both have sample size greater than or equal to thirty

**Q2:** normality – not normal, but both have sample sizes greater than or equal to 30, equal variances – p value is less than .05 so equal variances can be assumed

**Q3:** normality – not normal but all three have sample sizes above 30, equal variances – ***variances are NOT equal so cannot do the one-way anova regular test***

Run the statistical test! Put your results here:

**Q1:**

data: CONCACAF$tv\_audience\_share and UEFA$tv\_audience\_share

t = -1.0478, df = 55.381, p-value = 0.2993

alternative hypothesis: true difference in means is not equal to 0

95 percent confidence interval:

-0.6440756 0.2017568

sample estimates:

mean of x mean of y

0.3266667 0.5478261

**Q2:**

data: CONCACAF$population\_share and UEFA$population\_share

t = -0.05657, df = 38.17, p-value = 0.9552

alternative hypothesis: true difference in means is not equal to 0

95 percent confidence interval:

-0.3518109 0.3326805

sample estimates:

mean of x mean of y

0.2600000 0.2695652

**Q3:** Did not run because variances are not equal, we think we cannot do Kruskal-Wallis because that still needs equal variances?

Interpret your results!

**Q1:** The null hypothesis was supported at the .05 level (p-value = .2993), so there is not a significant difference between tv audiences for CONCACAF and UNEF countries

**Q2:** The null hypothesis was supported at the .05 level (p-value = .4649), so there is not a significant difference between GDP shares for CONCACAF and UNEF countries

**Q3:** N/A