

Discussion 13:

Which Shoes are More Expensive?

- 1) Which type of shoes do you think are more expensive, on average - men's dress shoes, women's dress shoes or running shoes? Explain your choice.
- 2) What would be the null and alternative hypothesis to determine at least one pair of the population means are not equal?
- 3) Gather data from a website that sells shoes, like Designer Shoe Warehouse. Be sure to select a random selection of shoe prices for men's dress shoes, women's dress shoes and running shoes. Be sure to select at least 12 prices for each type of shoe.
- 4) Calculate the mean and standard deviation for each type of shoe.
- 5) Two of the assumptions for conducting an ANOVA are "Each population from which a sample is taken is assumed to be normal," and "The populations are assumed to have equal standard deviations." Construct graphs (histograms, boxplots, dotplots or stemplots) for the data. Based on the graphs, do you think these assumptions have been met?
- 6) Use technology to find the F-test statistic and p-value.
- 7) Based on the p-value, what conclusion would you draw at the 0.05 level of significance?

Note: If your instructor does not want you to gather your own data, you can use the data set found here: [📊 Shoe Prices](#)

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