

Run the following commands in R.

```
> library(mosaic)
> ?SaratogaHouses
> View(SaratogaHouses)
> table(SaratogaHouses$fuel)
```

Say a homeowner in Saratoga County, New York is curious about whether upgrading their home from an oil heating fuel system to either a gas or electric fuel system would increase the resale value of their home. Use the SaratogaHouses dataset in R and a Kruskal-Wallis Test to answer the question, "which heating system results in the highest distribution of home resale values (price)?"

The null hypothesis for this study is that the with either gas, oil, or electric heating fuel systems . The alternative hypothesis is that at least one type of results in a different distribution of .

Perform a Kruskal-Wallis test for these hypotheses in R using the SaratogaHouses dataset.

The Kruskal-Wallis for these hypotheses gives a test statistic of with degrees of freedom, resulting in a p-value $< 2.2e-16$. There is evidence to the distribution of is different for at least one of the .

Which of the following codes best depicts the results of the Kruskal-Wallis Test?

- ☒ `> boxplot(price ~ fuel, data=SaratogaHouses)`
- ☐ `> stripchart(price ~ fuel, data=SaratogaHouses)`
- ☐ `> barchart(price ~ fuel, data=SaratogaHouses)`
- ☐ None of these codes should be used because we failed to reject the null hypothesis.

Which results in the highest median price of homes?

- ☒ gas
- ☐ electric
- ☐ oil
- ☐ We must continue to assume the median prices are the same for each group since we failed to reject the null hypothesis.

What is the highest median price?

Hint: This value cannot be accurately determined from a plot.