

5. A research center conducted a national survey about teenage behavior. Teens were asked whether they had consumed a soft drink in the past week. The following table shows the counts for three independent random samples from major cities.

	Baltimore	Detroit	San Diego	Total
Yes	727	1,232	1,482	3,441
No	177	431	798	1,406
Total	904	1,663	2,280	4,847

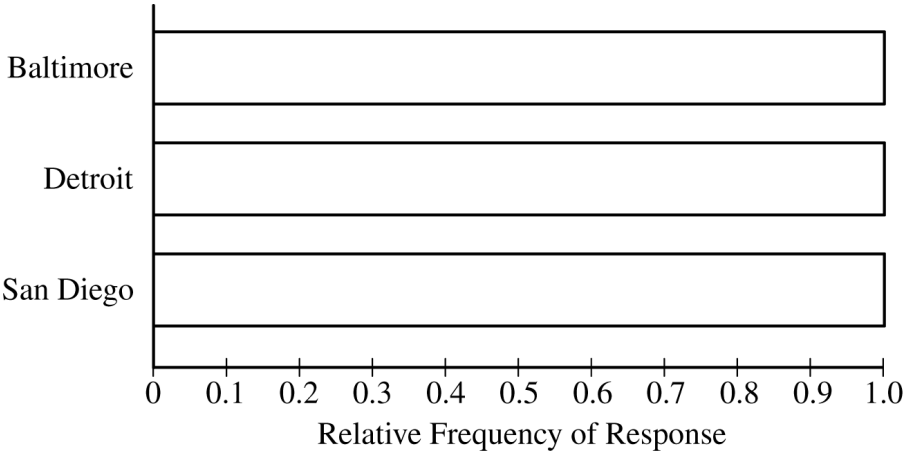
(a) Suppose one teen is randomly selected from each city’s sample. A researcher claims that the likelihood of selecting a teen from Baltimore who consumed a soft drink in the past week is less than the likelihood of selecting a teen from either one of the other cities who consumed a soft drink in the past week because Baltimore has the least number of teens who consumed a soft drink. Is the researcher’s claim correct? Explain your answer.

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(b) Consider the values in the table.

(i) Construct a segmented bar chart of relative frequencies based on the information in the table.



(ii) Which city had the smallest proportion of teens who consumed a soft drink in the previous week? Determine the value of the proportion.

(c) Consider the inference procedure that is appropriate for investigating whether there is a difference among the three cities in the proportion of all teens who consumed a soft drink in the past week.

(i) Identify the appropriate inference procedure.

(ii) Identify the hypotheses of the test.

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