**HarvardX:** CalcAPL1x Calculus Applied!

Help

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1.1 A Tale of Two Cities: Public Transit Fares in New York and Boston >

1.1.2 Exploratory Quiz: Why the Fare Decrease?

# 1.1.2 Exploratory Quiz: Why the Fare Decrease?

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## Question 1

1/1 point (graded)

Here are the fare histories that Jennifer mentioned:

Subway Fare History (in cents)							
	1979	1980	1981	1982			
Boston (MBTA)	25	50	75	60			
New York (MTA)	50	60	75	75			

Which of the following pieces of data do you think is most relevant in considering why Boston's Massachusetts Bay Transit Authority (MBTA) decided to reduce the 75 cents fare in 1982 while New York's Metropolitan Transportation Authority (MTA) did not?

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	The percent change	in the	fares from	1979 to	1981	in each city 🗸	,
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#### **Explanation**

Each could be useful, but the percent change in fare is likely more relevant to what happened in the two cities than the others. This is because it not only takes into account the change in price, but measures the change relative to the original fare. In this way, you can more easily compare the price changes between the two cities, if they are not identical.

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**1** Answers are displayed within the problem

### Question 2: Think About It...

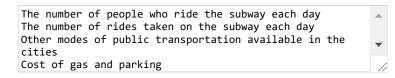
1/1 point (graded)

An economist looking at this data would likely try to think of other reasons the two cities' transit authorities reacted differently, beyond just the fares. What other reasons might there be?

Which of the quantities below would you want to measure in each city in order to investigate or explain the possible differences between Boston and New York?

- The populations in each city
- The size of the city (in terms of square miles)
- The number of people who ride the subway each day
- The number of rides taken on the subway each day
- Other modes of public transportation available in the cities
- Cost of gas and parking
- State or local funding for public transportation

Note: At this time, the text entry box for reflective questions does not support the percent symbol "%" - please type out the word "percent" if you need to refer to percents.





Thank you for your response.

#### **Explanation**

All of these quantities would be worth considering: the sizes of the cities, the levels of ridership before and after the fare changes, the absolute or percent changes in price, the past responsiveness of riders to changes in price, different funding structures for the transit systems, prices of competing goods like gas and taxis.

We'll focus on ridership in the remaining sections.

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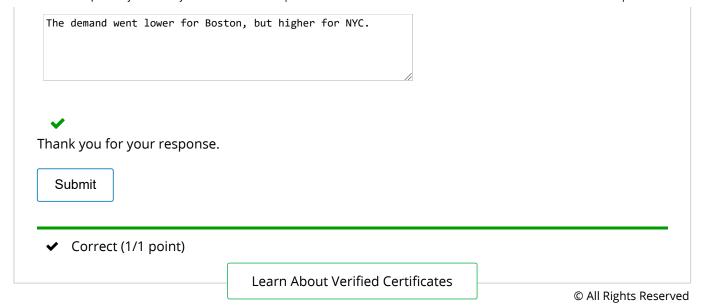
**1** Answers are displayed within the problem

## Question 3: Think About It...

1/1 point (graded)

Suppose that in 1979 the subway in both cities cost 25 cents and that in 1981, both cities raised fares to 75 cents. Is it still possible that Boston would have had a reason to lower fares but New York would not? If so, what might that reason be? If not, why not?

Note. At this time, the text entry box for reflective questions does not support the percent symbol "%" - please type out the word "percent" if you need to refer to percents.







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