



Problem of the Week

Problem E and Solution



Three on the ION

Problem

On Wednesday morning, Jayant, Kieron, and Lecia were on the same ION light rail train going to University of Waterloo station. Each person got on at a different station and was eating a different snack on the train. Once they arrived at the university, one person went to physics class, another went to biology class, and the other went to math class. Using the clues below, determine what snack each person was eating, what class they went to, and in which order they got on the train.

- (1) The three people are Kieron, the person eating the bagel, and the person going to math class.
- (2) The person eating the apple got on the train before Lecia.
- (3) Kieron got on the train 2nd and is *not* going to physics.
- (4) The person eating the bagel got on the train before the person eating the granola bar.

Solution

We can use a table to summarize the information in the clues. If we know that something does not go in a particular cell, we will also include that in the table.

From clue (1), Kieron was not eating a bagel or going to math class. From clue (3), Kieron got on the train 2nd and was not going to physics. We can then conclude that Kieron was going to biology class. This information is summarized in the table below.

	1 st to get on	2 nd to get on	3 rd to get on
Name		Kieron	
Snack		<i>not</i> bagel	
Class		biology	

From clue (4), we know that the person eating the bagel was not the 3rd person on the train. Since we know the 2nd person on the train was also not eating a bagel, it follows that the 1st person on the train was eating a bagel.

From clue (2), we know that Lecia was not the 1st person on the train. It follows that she was the 3rd person on the train. Then Jayant was the 1st person on the train.



Also from clues (2) and (4) we can conclude that Kieron was eating the apple and Lecia was eating the granola bar. This information is summarized in the table below.

	1 st to get on	2 nd to get on	3 rd to get on
Name	Jayant	Kieron	Lecia
Snack	bagel	apple	granola bar
Class		biology	

Looking again at clue (1), we can conclude that the person going to math class was the 3rd person on the train. Then the 1st person on the train was going to physics class. The final solution is shown.

	1 st to get on	2 nd to get on	3 rd to get on
Name	Jayant	Kieron	Lecia
Snack	bagel	apple	granola bar
Class	physics	biology	math