

## Lesson 11-5

## Example 1

Make a conclusion from the following statements.

Kayla took a vacation in either May or October.

Kayla did not miss a single day of work during October.

## Solution

Since Kayla was not on vacation during October, you can deduce that she took a vacation in May.

## Example 2

Anna, Ben, and Christy live in Chicago, San Francisco, and Denver, but not necessarily in that order. Christy does not live on the West Coast. Ben does not live in Illinois. Anna lives further east than Ben, but she does not live in Colorado. In which city does each person live?

## Solution

*Step 1* Make a table listing each person and each city.

	Chicago	Denver	San Francisco
Anna			
Ben			
Christy			

*Step 2* Since Christy does not live on the West Coast, place an **X** in her box for San Francisco. Since Ben

does not live in Illinois, place an **X** in his box for Chicago. Anna lives further east than Christy, so place an **X** in Anna's box for San Francisco since San Francisco is the furthest west of the three cities. Also, Anna does not live in Colorado, so put an **X** in her box for Denver.

	Chicago	Denver	San Francisco
Anna		X	X
Ben	X		
Christy			X

*Step 3* One person lives in San Francisco, so it must be Ben. Put a ✓ in his box for San Francisco. Since he can only live in one city, put an **X** in his box for Denver. Since Anna does not live in Denver or San Francisco, she must live in Chicago, so put a ✓ in her box for Chicago.

	Chicago	Denver	San Francisco
Anna	✓	<b>X</b>	<b>X</b>
Ben	<b>X</b>	<b>X</b>	✓
Christy			<b>X</b>

*Step 4* One person must live in Denver, and it isn't Anna or Ben, so it must be Christy. Use this information to complete the table.

	Chicago	Denver	San Francisco
Anna	✓	<b>X</b>	<b>X</b>
Ben	<b>X</b>	<b>X</b>	✓
Christy	<b>X</b>	✓	<b>X</b>

The final table shows that Anna lives in Chicago, Ben lives in San Francisco, and Christy lives in Denver.