

The program for this part should print out the truth table for the condition `!(x && (y || z))`. A truth table should cover all possible states of the variables and here we have 3 (x, y and z). And since we have 3 variables and two possible states they can each be in (true, false) we have 8 combinations. Our table also include a header, and a column for the condition as well as the answer.

x	y	z	Condition	Result
false	false	false	!(x && (y z))	
false	false	true	!(x && (y z))	
false	true	false	!(x && (y z))	
false	true	true	!(x && (y z))	
true	false	false	!(x && (y z))	
true	false	true	!(x && (y z))	
true	true	false	!(x && (y z))	
true	true	true	!(x && (y z))	

You need to populate the values for this column

The is a 9 by 5 table that can be represented as a 2D array

```
final int NUM_COLS = 5;
final int NUM_ROWS = 9;
String[][] truthTable = new String[NUM_ROWS][NUM_COLS];
```

```
// fill in the first (header) row
truthTable[0][0] = " x";
truthTable[0][1] = " y";
truthTable[0][2] = " z";
truthTable[0][3] = " Condition";
truthTable[0][4] = " Result";
```

Table headers

```
// fill in the x, y, z and condition values, make the last column blank
```

```
for (int i = 1; i < NUM_ROWS; i++) {
```

```
    // fill in the x values
```

```
    if ((i-1)/4 == 0) {
```

```
        truthTable[i][0] = "false";
```

```
    } else {
```

```
        truthTable[i][0] = "true";
```

```
    }
```

```
    // fill in the y values
```

```
    if ((i-1)%4 == 0 || (i-1)%4 == 1) {
```

```
        truthTable[i][1] = "false";
```

```
    } else {
```

```
        truthTable[i][1] = "true";
```

```
    }
```

```
    // fill in the z values
```

```
    if ((i-1)%2 == 0) {
```

```
        truthTable[i][2] = "false";
```

```
    } else {
```

```
        truthTable[i][2] = "true";
```

```
    }
```

```
    // copy condition
```

```
    truthTable[i][3] = "!(x && (y || z))";
```

```
    truthTable[i][4] = "";
```

```
}
```

Table body

This prints all the possible values for x, y, z and the condition on each row

```
// TODO: fill in values below and uncomment
```

```
// truthTable[1][4] = "";
```

```
// truthTable[2][4] = "";
```

```
// truthTable[3][4] = "";
```

x	y	z	Condition	Result
false	false	false	!(x && (y z))	
false	false	true	!(x && (y z))	
false	true	false	!(x && (y z))	
false	true	true	!(x && (y z))	
true	false	false	!(x && (y z))	
true	false	true	!(x && (y z))	
true	true	false	!(x && (y z))	
true	true	true	!(x && (y z))	

This part is responsible for populating the values for the result column. This is the only part you will have to modify and complete.