'Reasoning from Evidence' Testing a New Deodorant - Example #1

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The aim of this assessment is to provide the opportunity for you to:

- select appropriate methods to analyze a data set, including appropriate graphs and calculations
- use data analysis to draw conclusions from the evidence obtained.

A scientist is testing a new deodorant before it goes into production. She has created two possible fragrances, A and B, and two possible names, 'Bouquet' and 'Hunter'. She conducts an experiment to see which combination of fragrance and packaging people prefer. 40 people are asked to smell a small amount of the deodorants, sprayed from 4 cans.

They are not told that 'Bouquet A' and 'Hunter A' both contain exactly the same fragrance, A, or that 'Bouquet B' and 'Hunter B' both contain the same fragrance, B. Each person is asked to fill in a sheet, ticking a box to show how he or she feels about each of the four deodorants.

For example, this person is male. He hates Bouquet A, thinks Bouquet B is wonderful, that Hunter A is average and Hunter B is quite nice. The 40 results from the experiment are shown on pages 2 to 5.

Write a report saying which fragrance (A or B) and name (Hunter or Bouquet) are likely to be the most suitable if she wants to sell the deodorant to (i) females and (ii) males. Use tables and/or graphs in your report and make sure you explain in detail how you arrive at your conclusions.

Testing a new deodorant - Data Sheet 1

Sex: M

	1	2	3	4	5
Bouquet A	✓				
Bouquet B					✓
Hunter A			✓		
Hunter B				✓	

Sex: m

	1	2	3	4	5
Bouquet A		✓			
Bouquet B			✓		
Hunter A			✓		
Hunter B				✓	

Sex: Female

	1	2	3	4	5
Bouquet A			✓		
Bouquet B			✓		
Hunter A			✓		
Hunter B			✓		

Sex: M

	1	2	3	4	5
Bouquet A		✓			
Bouquet B			✓		
Hunter A			✓		
Hunter B		✓			

Sex: F

	1	2	3	4	5
Bouquet A				✓	
Bouquet B					✓
Hunter A				✓	
Hunter B					✓

Sex: m

	1	2	3	4	5
Bouquet A					✓
Bouquet B				✓	
Hunter A			✓		
Hunter B				✓	

Sex: Female

	1	2	3	4	5
Bouquet A					✓
Bouquet B				✓	
Hunter A					✓
Hunter B			✓		

Sex: M

	1	2	3	4	5
Bouquet A				✓	
Bouquet B		✓			
Hunter A				✓	
Hunter B			✓		

Sex: Female

	1	2	3	4	5
Bouquet A				✓	
Bouquet B			✓		
Hunter A				✓	
Hunter B		✓			

Sex: female

	1	2	3	4	5
Bouquet A			✓		
Bouquet B				✓	
Hunter A			✓		
Hunter B		✓			

Testing a new deodorant - Data Sheet 2

Sex: Male

	1	2	3	4	5
Bouquet A		✓			
Bouquet B			✓		
Hunter A				✓	
Hunter B					✓

Sex: Female

	1	2	3	4	5
Bouquet A		✓			
Bouquet B					✓
Hunter A			✓		
Hunter B				✓	

Sex: Female

	1	2	3	4	5
Bouquet A			✓		
Bouquet B				✓	
Hunter A					✓
Hunter B				✓	

Sex: MALE

	1	2	3	4	5
Bouquet A			✓		
Bouquet B		✓			
Hunter A					✓
Hunter B					✓

Sex: MALE

	1	2	3	4	5
Bouquet A				✓	
Bouquet B	✓				
Hunter A				✓	
Hunter B	✓				

Sex: Male

	1	2	3	4	5
Bouquet A	✓				
Bouquet B	✓				
Hunter A		✓			
Hunter B		✓			

Sex: Female

	1	2	3	4	5
Bouquet A				✓	
Bouquet B					✓
Hunter A				✓	
Hunter B					✓

Sex: Female

	1	2	3	4	5
Bouquet A			✓		
Bouquet B				✓	
Hunter A			✓		
Hunter B				✓	

Sex: Male

	1	2	3	4	5
Bouquet A	✓				
Bouquet B		✓			
Hunter A			✓		
Hunter B				✓	

Sex: F

	1	2	3	4	5
Bouquet A			✓		
Bouquet B		✓			
Hunter A			✓		
Hunter B			✓		

Testing a new deodorant - Data Sheet 3

Sex — M

	1	2	3	4	5
Bouquet A			✓		
Bouquet B			✓		
Hunter A				✓	
Hunter B				✓	

Sex — F

	1	2	3	4	5
Bouquet A			✓		
Bouquet B					✓
Hunter A		✓			
Hunter B				✓	

Sex — female

	1	2	3	4	5
Bouquet A			✓		
Bouquet B				✓	
Hunter A			✓		
Hunter B				✓	

Sex — m

	1	2	3	4	5
Bouquet A				✓	
Bouquet B		✓			
Hunter A				✓	
Hunter B				✓	

Sex — Female

	1	2	3	4	5
Bouquet A			✓		
Bouquet B				✓	
Hunter A			✓		
Hunter B					✓

Sex — Male

	1	2	3	4	5
Bouquet A					✓
Bouquet B				✓	
Hunter A					✓
Hunter B				✓	

Sex — male

	1	2	3	4	5
Bouquet A			✓		
Bouquet B	✓				
Hunter A					✓
Hunter B					✓

Sex — FEMALE

	1	2	3	4	5
Bouquet A			✓		
Bouquet B				✓	
Hunter A		✓			
Hunter B				✓	

Sex — female

	1	2	3	4	5
Bouquet A				✓	
Bouquet B				✓	
Hunter A					✓
Hunter B					✓

Sex — M

	1	2	3	4	5
Bouquet A			✓		
Bouquet B		✓			
Hunter A				✓	
Hunter B		✓			

Testing a new deodorant - Data Sheet 4

Sex: male

	1	2	3	4	5
Bouquet A		✓			
Bouquet B				✓	
Hunter A					✓
Hunter B			✓		

Sex: Female

	1	2	3	4	5
Bouquet A				✓	
Bouquet B				✓	
Hunter A				✓	
Hunter B				✓	

Sex: Male

	1	2	3	4	5
Bouquet A			✓		
Bouquet B			✓		
Hunter A			✓		
Hunter B			✓		

Sex: f

	1	2	3	4	5
Bouquet A					✓
Bouquet B				✓	
Hunter A		✓			
Hunter B			✓		

Sex: female

	1	2	3	4	5
Bouquet A				✓	
Bouquet B					✓
Hunter A		✓			
Hunter B				✓	

Sex: male

	1	2	3	4	5
Bouquet A			✓		
Bouquet B		✓			
Hunter A				✓	
Hunter B			✓		

Sex: male

	1	2	3	4	5
Bouquet A				✓	
Bouquet B				✓	
Hunter A				✓	
Hunter B					✓

Sex: F

	1	2	3	4	5
Bouquet A		✓			
Bouquet B					✓
Hunter A			✓		
Hunter B					✓

Sex: Female

	1	2	3	4	5
Bouquet A					✓
Bouquet B					✓
Hunter A					✓
Hunter B					✓

Sex: Male

	1	2	3	4	5
Bouquet A		✓			
Bouquet B		✓			
Hunter A					✓
Hunter B					✓