

# Comparing Pie Charts

Pie charts are a circle split into different sized sections where each section of the pie chart represents a different category.

They must have a key but do not have to contain any numerical values

Pie charts can be used to:

- represent univariate data
- compare 2 or more sets of unpaired data.

For data sets that are unequal in size we should use proportionate **comparative pie charts**

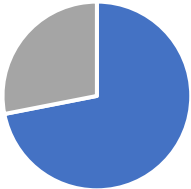
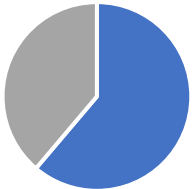


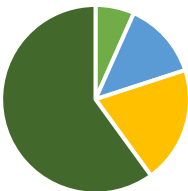
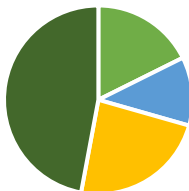


## IMPORTANT:

They show us the **proportion** of data within various categories not the total

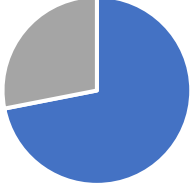
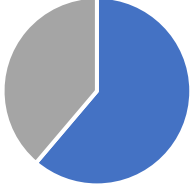


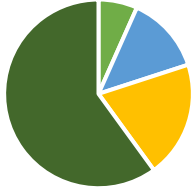



Without knowing the total population for a pie chart we cannot know the total of each category but we can compare the **proportions**

When comparing two pie charts we must never refer to one being 'bigger' or 'more' than the other, we must always refer to one having a 'higher proportion' than the other

For each of the following pairs of pie charts, answer the True/False comparison questions that go with them

|  |  |   |
|--|--|---|
| <p>2009</p>  <p>■ Males ■ Females</p>                             | <p>In 2009 there were more males than females<br/> <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> CAN'T TELL</p> <p>In 2019 there were more females than there were in 2009<br/> <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> CAN'T TELL</p> <p>In 2019 the proportion of males has decreased from 2009<br/> <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> CAN'T TELL</p>  | <p>2019</p>  <p>■ Males ■ Females</p>                              |
| <p>Year 7</p>  <p>■ Amythst ■ Amber<br/>■ Sapphire ■ Emerald</p> | <p>There are more year7 students on Emerald than year11<br/> <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> CAN'T TELL</p> <p>The proportion of year7 and 11 students on Sapphire is roughly the same<br/> <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> CAN'T TELL</p> <p>Most students in year11 are on Amber<br/> <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> CAN'T TELL</p>   | <p>Year 11</p>  <p>■ Amythst ■ Amber<br/>■ Sapphire ■ Emerald</p> |
| <p>1st Year</p>  <p>■ Q1 ■ Q2 ■ Q3 ■ Q4</p>                     | <p>The company sold more in Q4 in their first and second year of trading<br/> <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> CAN'T TELL</p> <p>The company sold less in Q4 in their 2<sup>nd</sup> year of trading compared to year 1<br/> <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> CAN'T TELL</p> <p>Q1 was the worst quarter for the company in both years<br/> <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> CAN'T TELL</p> | <p>2nd Year</p>  <p>■ Q1 ■ Q2 ■ Q3 ■ Q4</p>                      |
| <p>Alpha</p>  <p>■ sales ■ store cards<br/>■ complaints</p>     | <p>The Alpha team have more complaints than the Beta team<br/> <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> CAN'T TELL</p> <p>The Beta team have a higher proportion of sales than the Alpha team<br/> <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> CAN'T TELL</p> <p>Both teams have similar proportions of store card uptake<br/> <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> CAN'T TELL</p>                                 | <p>Beta</p>  <p>■ sales ■ store cards<br/>■ complaints</p>       |

# Solutions

|   |   |  |
|---|---|--|
| <p>2009</p>  <p>■ Males ■ Females</p>                            | <p>In 2009 there were more males than females<br/> <input checked="" type="checkbox"/> TRUE   <input type="checkbox"/> FALSE   <input type="checkbox"/> CAN'T TELL</p> <p>In 2019 there were more females than there were in 2009<br/> <input type="checkbox"/> TRUE   <input type="checkbox"/> FALSE   <input checked="" type="checkbox"/> CAN'T TELL</p> <p>In 2019 the proportion of males has decreased from 2009<br/> <input checked="" type="checkbox"/> TRUE   <input type="checkbox"/> FALSE   <input type="checkbox"/> CAN'T TELL</p>  | <p>2019</p>  <p>■ Males ■ Females</p>                             |
| <p>Year 7</p>  <p>■ Amythst ■ Amber<br/>■ Sapphire ■ Emerald</p> | <p>There are more year7 students on Emerald than year11<br/> <input type="checkbox"/> TRUE   <input type="checkbox"/> FALSE   <input checked="" type="checkbox"/> CAN'T TELL</p> <p>The proportion of year7 and 11 students on Sapphire is roughly the same<br/> <input checked="" type="checkbox"/> TRUE   <input type="checkbox"/> FALSE   <input type="checkbox"/> CAN'T TELL</p> <p>Most students in year11 are on Amber<br/> <input checked="" type="checkbox"/> TRUE   <input type="checkbox"/> FALSE   <input type="checkbox"/> CAN'T TELL</p>   | <p>Year 11</p>  <p>■ Amythst ■ Amber<br/>■ Sapphire ■ Emerald</p> |
| <p>1st Year</p>  <p>■ Q1 ■ Q2 ■ Q3 ■ Q4</p>                    | <p>The company sold more in Q4 in their first and second year of trading<br/> <input checked="" type="checkbox"/> TRUE   <input type="checkbox"/> FALSE   <input type="checkbox"/> CAN'T TELL</p> <p>The company sold less in Q4 in their 2<sup>nd</sup> year of trading compared to year 1<br/> <input type="checkbox"/> TRUE   <input type="checkbox"/> FALSE   <input checked="" type="checkbox"/> CAN'T TELL</p> <p>Q1 was the worst quarter for the company in both years<br/> <input type="checkbox"/> TRUE   <input checked="" type="checkbox"/> FALSE   <input type="checkbox"/> CAN'T TELL</p> | <p>2nd Year</p>  <p>■ Q1 ■ Q2 ■ Q3 ■ Q4</p>                     |
| <p>Alpha</p>  <p>■ sales ■ store cards<br/>■ complaints</p>    | <p>The Alpha team have more complaints than the Beta team<br/> <input type="checkbox"/> TRUE   <input type="checkbox"/> FALSE   <input checked="" type="checkbox"/> CAN'T TELL</p> <p>The Beta team have a higher proportion of sales than the Alpha team<br/> <input type="checkbox"/> TRUE   <input checked="" type="checkbox"/> FALSE   <input type="checkbox"/> CAN'T TELL</p> <p>Both teams have similar proportions of store card uptake<br/> <input checked="" type="checkbox"/> TRUE   <input type="checkbox"/> FALSE   <input type="checkbox"/> CAN'T TELL</p>                                 | <p>Beta</p>  <p>■ sales ■ store cards<br/>■ complaints</p>      |