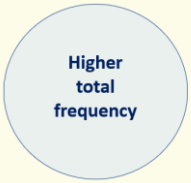
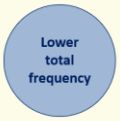
Comparative Pie Charts

Comparative pie charts are two pie charts that present data sets with different sized total frequencies. They are used to compare two data sets.

$$r_2 = r_1 \frac{\sqrt{F_2}}{\sqrt{F_1}}$$

The larger the pie chart, the greater the total frequency.





Areas of comparative pie charts should be same ratio as the total frequencies.

r = radius
F = frequency
1 = first pie chart
2 = second pie chart

Comparing comparative pie charts:

- To compare total frequencies → compare areas of pie charts
- To compare proportions → compare individual angles

Roberta is investigating how the ages of brides getting married in the UK has changed from 2003 to 2013. She collects official data from the internet using the website 'Office for National Statistics'.

Age of bride	2003	2013
Under 25	53 837	32 197
25 to 34	130 138	126 377
35 to 44	54 103	44 422
45 to 54	21 858	24 952
55 and over	10 173	12 874
Total	**270 109**	**240 822**

(Source: www.ons.gov.uk)

Roberta wants to compare the proportion of brides in each age group and the total number of brides in each age group by presenting the results in charts for 2003 and 2013

Roberta used a circle with a radius of 4 cm for her comparative pie chart for 2003

Calculate the radius of the circle for her comparative pie chart for 2013

Give your answer correct to 2 decimal places.

..... cm

(2 marks)

Question 7 from GCSE Statistics (Edexcel) Paper 1 Higher, June 2024

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