Your notes

KS3 Maths: revision notes

Averages and charts

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Averages and range

- **Mean**: add up the values and divide by how many there are. **Median**: the middle value when they are in order (with an even number of values, the **mean** of the middle two). Mode: the most common value. Range: highest – lowest.
- For 3, 5, 5, 8, 9: the **mean** is 30 ÷ 5 = 6, the **median** is 5, the **mode** is 5 and the range is 6.
- The **mean** uses every value but is affected by extreme values (**outliers**). The **median** isn't affected much by outliers. The mode can be used for data that isn't numbers, such as favourite colours.

Frequency tables

- **Mean** from a **frequency** table = total of (value × **frequency**) ÷ total frequency.
- For scores 1, 2 and 3 with frequencies 2, 3 and 5: the total is 2 + 6 + 15 = 23, and the **mean** is 23 ÷ 10 = 2.3.

Charts and graphs

- Bar charts and pictograms compare categories. Line graphs show how something changes over time.
- **Pie charts**: the angle for each sector = **frequency** ÷ total × 360°.
- **Scatter graphs** show whether two things are related: positive **correlation** (both increase), negative **correlation** (one increases as the other decreases) or no correlation. A line of best fit can be used to make estimates.

Comparing data

- Compare an average (such as the **mean** or **median**) and the **range**.
- A smaller **range means** the data is more consistent.

Key terms

Mean	The total of the values divided by the number of values.
Median	The middle value when the data is in order.
Mode	The value that appears most often.
Range	The difference between the highest and lowest values.
Outlier	A value that is much bigger or smaller than the rest.
Frequency	How many times something occurs.
Pie chart	A circle divided into sectors that show proportions.
Scatter graph	A graph of points that shows whether two sets of data are related.
Correlation	A relationship between two sets of data.
Line of best fit	A straight line drawn through the middle of the points on a scatter graph.

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. What is the mean of 3, 5, 5, 8 and 9?
2. What is the median of 3, 5, 5, 8 and 9?
3. What is the range of 3, 5, 5, 8 and 9?
4. What is the median of 2, 4, 7 and 9?
5. Which average is affected most by an extreme value?
6. Which average can be used for data that isn't numbers, such as favourite colours?
7. In a pie chart, 30 out of 120 people chose football. What angle is the football sector?
8. What does a scatter graph with points going up from left to right show?

Answers

1. 6
2. 5
3. 6
4. 5.5
5. The mean
6. The mode
7. 90°
8. Positive correlation

What to do next

Practise 12 questions on this topic

Try 4 exam questions, with mark schemes

Read the lesson, one step at a time

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