Year 9 Statistics – Challenge

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Year 9 · Maths · Statistics · Level 3 Challenge · 8 questions

Name _____ **Date** _____

A. Think like a mathematician

1. A pie chart in a report is labelled with the percentages 45%, 30% and 35%. Explain why this is misleading.

Answer _____

2. A company says its workers earn a mean of $95 000 a year, but one director earns $900 000 and most workers earn about $30 000. Explain why this is misleading.

Answer _____

3. Masses (kg), with frequencies: $0 < m \leq 2$: 6; $2 < m \leq 4$: 2; $4 < m \leq 6$: 11; $6 < m \leq 8$: 8; $8 < m \leq 10$: 13. Ivo says the median is in the class $4 < m \leq 6$, because it is the middle one of the five classes. Explain the mistake and find the class that contains the median.

Answer _____

4. In a group, 20 people like French, 16 like Spanish and 4 like both. Everyone likes at least one of them. Farah says there are 36 people in the group. Explain the mistake and find the correct number.

Answer _____

5. Ivo says a strong correlation between two variables proves that one causes the other. Is Ivo right? Explain.

Answer _____

6. Farah says in a Venn diagram, the number in the region for A only is the total number in A. Is Farah right? Explain.

Answer _____

7. The back-to-back stem-and-leaf diagram shows the test marks out of 60 of two classes (key: 3 | 2 | 5 means 23 for Class A and 25 for Class B). Find the median and the range for each group, then compare the two groups.

Class A	Stem	Class B
5 4 3	**2**	2 4 7 7
4 2	**3**	2 5
9 8 7 6 5 0	**4**	0 1 5

Answer _____

8. Which representation would you choose to show whether the engine size of a car is related to its fuel use? Explain why.

Answer _____