Chapter 19: Statistics

19A   DATA COLLECTION

> A **census** involves collecting data about *every* individual in the whole population.
>
> A **sample** involves collecting data about a *part* of the population only.

1 State whether a census or a sample would be used to investigate the:

   a number of children in Australian families   **b** heights of the members of a netball team

   c pets owned by students in a Year 7 class   **d** length of time a particular brand of light bulb will last.

2 Luke wants to know his classmates' favourite video game, so he asks his eight best friends. Is this a census or a sample?

19B   CATEGORICAL DATA

> **Categorical data** is data which can be placed in categories.
>
> We can organise categorical data using a **tally and frequency table**.
>
> - The **tally** is used to count the data in each category.
>
>   We use | to represent 1, and ⊬⊬⊬ to represent 5.
>
> - The **frequency** gives the total number in each category.
>
> The **mode** is the most frequently occurring category.

1 Students in a Year 7 class were asked who their favourite teacher was.

The teachers were Mr Smith (S), Mr White (W), Mrs Brown (B), and Miss Doyle (D). The results were:

        S S B D W   W D S S B   D W W W S   S B W W D   W S D B W

   a Draw a tally and frequency table for the data.

   b What fraction of students chose Miss Doyle as their favourite teacher? Write your answer in lowest terms.

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   c What is the mode of the data? Explain what it means.

2 A sample of customers at a racket store were asked which sport they prefer. The choices were badminton (B), squash (S), and tennis (T). The results were:

        T T B S B   B S T S B   B T B T T   B S T T S   T S B B T   S T T
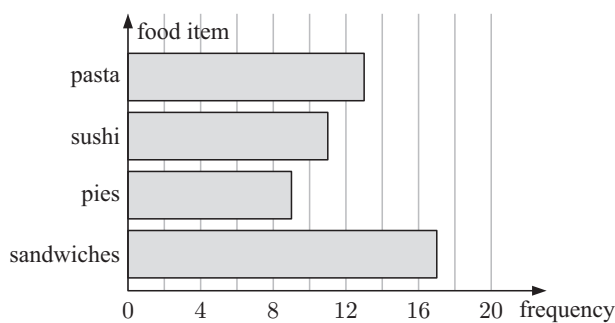
   a Draw a tally and frequency table for the data.

   b What was the most popular sport?

   c Find the percentage of customers surveyed who prefer squash.

19C   DISPLAYING CATEGORICAL DATA

1 A school canteen kept a record of the food items purchased by students one lunch time. The results are displayed in the horizontal bar chart below.

   a How many students ate pasta?   **b** How many food items were bought?

   c What percentage of students ate pies?   **d** Find the mode of the data.