



S21-10min Pie Charts: 10-minute Pack

EDEXCEL 1ST0 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** A number of pupils were asked to name their favourite school sport. The pie chart shows the results, with the number of pupils choosing each sport written on each sector.



- (a) Write down the sport that was most popular. (1)

- (b) Work out the total number of pupils who took part in the survey. (2)

(Total for Question 1 is 3 marks)

- 2** 30 people were asked to choose their favourite drink from a list. The table shows the results.

Drink	Tea	Coffee	Juice	Water
Frequency	8	4	6	12

- (a) Write down, as a fraction in its simplest form, the proportion of people who chose coffee. (2)

- (b) Write down, as a fraction in its simplest form, the proportion of people who chose water. (1)

(Total for Question 2 is 3 marks)

- 3** A pie chart for 60 students shows that Art has a sector representing 30% of the students. Work out the number of students who study Art.

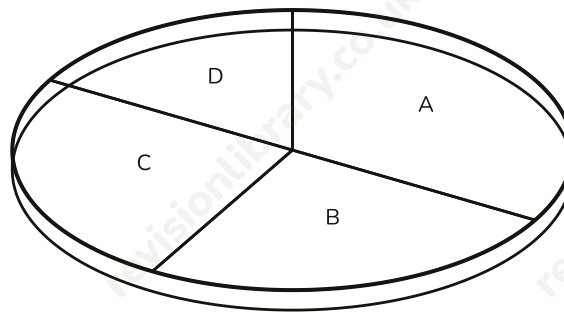
(Total for Question 3 is 2 marks)

- 4** State one advantage of using a pie chart to compare the sizes of categories as proportions of a whole.

(Total for Question 4 is 1 mark)

- 5 The diagram below shows the same type of data drawn as a 3D-style pie chart, tilted at an angle.

Explain one reason why a 3D-style pie chart like this can be misleading compared to a standard 2D pie chart.



A 3D-style pie chart drawn at a tilted angle

(Total for Question 5 is 2 marks)

Mark scheme · S21-10min Pie Charts: 10-minute Pack

Question 1

- (a) **B1** Football cao
- (a) **Answer: Football**
- (b) **M1** $12 + 8 + 5 + 5$, oe (adds all four frequencies)
- (b) **A1** 30 cao
- (b) **Answer: 30**

Question 2

- (a) **M1** $\frac{4}{30}$ seen, oe
- (a) **A1** $\frac{2}{15}$ cao
- (a) **Answer: $\frac{2}{15}$**
- (b) **B1** $\frac{2}{5}$ cao
- (b) **Answer: $\frac{2}{5}$**

Question 3

- **M1** 0.3×60 , oe
- **A1** 18 cao
- **Answer: 18**

Question 4

- **B1** it shows each category's share of the total at a glance, making proportions easy to compare visually, oe
- **Answer: It shows each category's share of the total at a glance, making proportions easy to compare visually.**

Question 5

- **B1** identifies that tilting the chart distorts the apparent area of sectors (sectors are stretched/squashed by the perspective)
- **B1** develops this to explain the consequence, e.g. sectors nearer the front/bottom of the tilt look bigger than their true angle/proportion suggests, making it harder to compare categories fairly
- **Answer: Tilting the pie chart in 3D distorts the sectors so that some (e.g. those at the front) appear larger than their true proportion, while others appear smaller, making accurate comparisons between categories difficult.**