



KS2.M-Y6S1 Statistics: Pie Charts and the Mean

Calculators not allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** A pie chart shows how 40 pupils in Year 6 travel to school. $\frac{1}{4}$ of the pie is by bus. How many pupils travel by bus?

(1)

- 2** A pie chart has angles that represent numbers of books read. One sector has angle 90 degrees. The full pie represents 360 degrees and 48 books in total. How many books does the 90 degree sector represent?

(2)

- 3** A survey of 60 children recorded favourite fruits. The pie chart shows apples 120 degrees, bananas 90 degrees. How many children chose bananas?

(2)

- 4** A pie chart shows the time a pupil spends on activities in a day. Reading is 2 hours, shown by a sector of 30 degrees. What angle should represent playing (4 hours)?

(2)

- 5** A pie chart displays pets owned by 30 families. Cats make up 40 percent. How many families have cats?

(2)

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- 6** The mean number of goals scored by a team in 5 matches is 3. One match had 5 goals, another had 1 goal. What is the total number of goals in the other three matches?

(2)

-
- 7** Here are the scores in a test: 7, 9, 12, 8, 14. Calculate the mean score. Give your answer as a whole number or decimal.

(2)

-
- 8** A pie chart shows favourite school subjects. Maths has angle 108 degrees. Work out the percentage of pupils who chose maths. Give your answer to the nearest whole percent.

(2)

-
- 9** A pie chart represents 24 concerts attended by a group. One sector is 45 degrees. How many concerts does that sector represent? (Show working)

(2)

- 10** A club recorded the number of practice sessions attended by 8 pupils: 6, 5, 7, 6, 8, 5, 7, 4. Calculate the mean number of sessions. Give your answer as a decimal to one place if necessary.

(2)

- 11** A pie chart shows types of bread sold in a bakery. Rye is 54 degrees. What fraction of the bread sold is rye? Give your answer in simplest form.

(1)

- 12** A school has 200 pupils. A pie chart of favourite break snacks shows crisps 25% and fruit 35%. How many pupils chose either crisps or fruit?

(2)

- 13** A pie chart is drawn for 80 visitors. One sector is labelled 72 degrees for those who came by car. How many visitors came by car?

(2)

- 14** A pie chart for 50 pupils shows: football 144 degrees, netball 90 degrees and other activities 54 degrees. What angle should represent running if these are the only categories?

(2)

- 15** A teacher recorded these test scores for a group of 10 children: 2, 3, 3, 4, 5, 5, 6, 6, 7, 8. Calculate the mean test score. Give your answer to one decimal place if needed.

(2)

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- 16** A pupil says: "If I add two zeros to my list of three numbers and then divide by five, the mean stays the same." The three numbers are 12, 15 and 13. Is the pupil correct? Explain your answer.

(2)

-
- 17** A pie chart shows how 120 people travelled to an event. The cycle sector is 54 degrees. How many people cycled? Show working.

(2)

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- 18** A line graph shows the number of visitors to a museum each day: Monday 30, Tuesday 45, Wednesday 50, Thursday 35, Friday 40. Calculate the mean number of visitors for the five days.

(2)

Mark scheme · KS2.M-Y6S1 Statistics: Pie Charts and the Mean

Question 1

- **B1** 10 cao
- Answer: **10**

Question 2

- **M1** $90/360 \times 48$ seen (or equivalent fraction method)
- **A1** 12 cao
- Answer: **12**

Question 3

- **M1** $90/360 \times 60$ seen
- **A1** 15 cao
- Answer: **15**

Question 4

- **M1** Scale found: 2 hours $\rightarrow$ 30 degrees or 1 hour $\rightarrow$ 15 degrees
- **A1** 60 degrees cao
- Answer: **60**

Question 5

- **M1** $30 \times 40\%$ or 30×0.4 seen
- **A1** 12 cao
- Answer: **12**

Question 6

- **M1** Total goals found: mean $\times$ number = $3 \times 5 = 15$
- **A1** 9 cao
- Answer: **9**

Question 7

- **M1** Sum and division shown, e.g. $(7+9+12+8+14) / 5$
- **A1** 10 cao
- Answer: **10**

Question 8

- **M1** $108/360 \times 100\%$ method or $\text{angle}/360 \times 100\%$ seen
- **A1** 30% cao
- Answer: **30%**

Question 9

- **M1** $45/360 \times 24$ seen
- **A1** 3 cao
- Answer: **3**

Question 10

- **M1** Sum and division shown: $(6+5+7+6+8+5+7+4) / 8$
- **A1** 6.0 cao
- Answer: **6.0**

Question 11

- **B1** $3/20$ cao
- Answer: **3/20**

Question 12

- M1 $200 \times (25\% + 35\%)$ or 200×0.6 seen
- A1 120 cao
- Answer: **120**

Question 13

- M1 $72/360 \times 80$ or equivalent method seen
- A1 16 cao
- Answer: **16**

Question 14

- M1 Sum of given angles found: $144 + 90 + 54 = 288$
- A1 72 degrees cao
- Answer: **72**

Question 15

- M1 Sum and division shown: $(2+3+3+4+5+5+6+6+7+8) / 10$
- A1 4.9 cao
- Answer: **4.9**

Question 16

- B1 States that adding zeros changes the number of values so the mean will change
- B1 Gives correct comparison, e.g. original mean $40/3 = 13.33$ and with zeros $40/5 = 8$, so they are not the same
- Answer: **No. Adding two zeros increases the number of values so the mean changes; original mean = $40/3 = 13.33$, with zeros mean = $40/5 = 8$**

Question 17

- M1 $54/360 \times 120$ or equivalent method seen
- A1 18 cao
- Answer: **18**

Question 18

- M1 Sum and division shown: $(30+45+50+35+40) / 5$
- A1 40 cao
- Answer: **40**