9.5 Statistics: Pie Charts and the Mean: 2-hour Pack

Calculators not allowed · about 120 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 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)

---

2 A pictogram uses (*) for 4 items and (half) for 2 items.

Cats: (*) (*) (half)
Dogs: (*) (*)
Fish: (*) (*)

How many items are shown altogether?

Answer: ___

(3)

---

3 30 customers answered a survey. 11 of them bought a sandwich. In a pie chart this is shown as a sector.

What is the angle of the sector?

Answer: ___ degrees

(2)

© Revision Library | revisionlibrary.co.uk

4 The mean of 7 numbers is 24. 6 of the numbers are 21, 21, 26, 21, 20, 26.

What is the other number?

Answer: ___

(2)

---

5 20 children answered a survey. 3 of them walk to school. In a pie chart this is shown as a sector.

What is the angle of the sector?

Answer: ___ degrees

(2)

---

6 A pie chart shows how 360 customers answered a survey. The sector for those who bought a sandwich has an angle of 210 degrees.

How many customers bought a sandwich?

Answer: ___

(2)

© Revision Library | revisionlibrary.co.uk

7 The mean of 7 numbers is 25. 6 of the numbers are 24, 28, 24, 28, 21, 23.

What is the other number?

Answer: ___

(2)

---

8 A school club survey is shown.

Boys: 6 chose Swimming, 8 chose Tennis
Girls: 28 chose Swimming, 5 chose Tennis

How many pupils chose Swimming?

Answer: ___

(2)

---

9 A line graph shows the height of a plant in cm at different times. The points on the graph are: 8:00 = 18, 9:00 = 15, 10:00 = 14, 11:00 = 15, 12:00 = 21, 13:00 = 22.

Between which two consecutive times was the greatest increase? Write the earlier time.

Answer: ___

(2)

© Revision Library | revisionlibrary.co.uk

10 72 pupils answered a survey. 30 of them voted for football. In a pie chart this is shown as a sector.

What is the angle of the sector?

Answer: ___ degrees

(2)

---

11 A pictogram uses (*) for 4 items and (half) for 2 items.

Cats: (*) (half)
Dogs: (*) (half)
Fish: (*)

How many whole symbols are needed to show 12 items?

Answer: ___

(2)

---

12 The table shows the number of visitors for four groups.

Bus: 272
Car: 228
Walk: 69
Bike: 703

What is the difference between the highest and the lowest visitors?

Answer: ___

(2)

© Revision Library | revisionlibrary.co.uk

13 90 people answered a survey. 2 of them chose tea. In a pie chart this is shown as a sector.

What is the angle of the sector?

Answer: ___ degrees

(2)

---

14 Noah records the points scored in a game each round over 3 days: 23, 22, 15.

On the next day Noah does 26. What is the mean of all 4 days?

Answer: ___

(2)

---

15 Here are 4 daily rainfall in mm: 36, 33, 31, 28.

What is the mean?

Answer: ___

(2)

---

16 Ethan records the books read each week over 4 days: 10, 9, 15, 14.

On the next day Ethan does 20. What is the mean of all 5 days?

Answer: ___

(2)

© Revision Library | revisionlibrary.co.uk

17 A school club survey is shown.

Boys: 18 chose Football, 17 chose Netball
Girls: 10 chose Football, 21 chose Netball

How many pupils were surveyed altogether?

Answer: ___

(3)

---

18 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)

---

19 A school club survey is shown.

Boys: 10 chose Chess, 29 chose Drama
Girls: 26 chose Chess, 15 chose Drama

How many boys were surveyed?

Answer: ___

(2)

© Revision Library | revisionlibrary.co.uk

20 The table shows the litres of rain for four groups.

Red: 845
Blue: 577
Green: 810
Yellow: 716

What is the total for all four groups?

Answer: ___

(3)

---

21 The table shows the number of pupils for four groups.

Year 3: 639
Year 4: 900
Year 5: 33
Year 6: 642

How many pupils were there for Year 6?

Answer: ___

(1)

---

22 A line graph shows the water in a tank in litres at different times. The points on the graph are: 8:00 = 13, 9:00 = 11, 10:00 = 13, 11:00 = 11, 12:00 = 14, 13:00 = 15.

What was the value at 10:00?

Answer: ___ litres

(1)

© Revision Library | revisionlibrary.co.uk

23 Aaron records the books read each week over 4 days: 6, 6, 10, 10.

On the next day Aaron does 16. What is the mean of all 5 days?

Answer: ___

(2)

---

24 In a class of 37 pupils, 23 like football, 13 like netball and 6 like both.

How many pupils like neither?

Answer: ___

(2)

---

25 A pie chart shows how 20 people answered a survey. The sector for those who chose tea has an angle of 90 degrees.

How many people chose tea?

Answer: ___

(2)

© Revision Library | revisionlibrary.co.uk

26 24 children answered a survey. 22 of them walk to school. In a pie chart this is shown as a sector.

What is the angle of the sector?

Answer: ___ degrees

(2)

---

27 The table shows the tickets sold for four groups.

Spring: 351
Summer: 747
Autumn: 536
Winter: 857

How many more tickets were there for Autumn than for Spring?

Answer: ___

(2)

---

28 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)

© Revision Library | revisionlibrary.co.uk

29 The table shows the number of visitors for four groups.

Mon: 214
Tue: 695
Wed: 829
Thu: 94

What is the total for all four groups?

Answer: ___

(1)

---

30 A pictogram uses (*) for 20 items and (half) for 10 items.

Spring: (*) (*) (*) (*) (*)
Summer: (*) (*) (*) (*)
Autumn: (*)

How many whole symbols are needed to show 40 items?

Answer: ___

(2)

---

31 A pictogram uses (*) for 10 items and (half) for 5 items.

Red: (*) (half)
Blue: (*) (*)
Green: (*) (half)

How many whole symbols are needed to show 30 items?

Answer: ___

(2)

© Revision Library | revisionlibrary.co.uk

32 Here are 5 heights in cm: 32, 17, 55, 8, 49.

What is the range?

Answer: ___ cm

(1)

---

33 36 pupils answered a survey. 32 of them voted for football. In a pie chart this is shown as a sector.

What is the angle of the sector?

Answer: ___ degrees

(2)

---

34 Layla records the points scored in a game each round over 4 days: 8, 9, 9, 10.

On the next day Layla does 17. What is the mean of all 5 days?

Answer: ___

(2)

---

35 The mean mark of 4 pupils in a test is 6.

What is the total of their marks?

Answer: ___

(1)

© Revision Library | revisionlibrary.co.uk

36 The table shows the number of visitors for four groups.

Red: 569
Blue: 817
Green: 126
Yellow: 494

How many visitors were there for Blue?

Answer: ___

(1)

---

37 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)

---

38 In a class of 34 pupils, 22 like swimming, 15 like cycling and 14 like both.

How many pupils like neither?

Answer: ___

(2)

© Revision Library | revisionlibrary.co.uk

39 The table shows the points scored for four groups.

Cats: 123
Dogs: 774
Fish: 681
Birds: 127

What is the difference between the highest and the lowest points?

Answer: ___

(2)

---

40 360 pupils answered a survey. 239 of them voted for football. In a pie chart this is shown as a sector.

What is the angle of the sector?

Answer: ___ degrees

(2)

---

41 A line graph shows the temperature in degrees Celsius at different times. The points on the graph are: 8:00 = 6, 9:00 = 11, 10:00 = 12, 11:00 = 10, 12:00 = 16, 13:00 = 21.

At what time was the value highest?

Answer: ___

(1)

© Revision Library | revisionlibrary.co.uk

42 A line graph shows the temperature in degrees Celsius at different times. The points on the graph are: 8:00 = 11, 9:00 = 17, 10:00 = 17, 11:00 = 14, 12:00 = 18, 13:00 = 24.

By how much did it change between 11:00 and 12:00? Write a positive number.

Answer: ___ degrees

(2)

---

43 The table shows the number of books borrowed for four groups.

Red: 194
Blue: 734
Green: 740
Yellow: 411

How many more books were there for Blue than for Yellow?

Answer: ___

(1)

---

44 Olu records the books read each week over 4 days: 9, 7, 7, 5.

On the next day Olu does 15. What is the mean of all 5 days?

Answer: ___

(2)

© Revision Library | revisionlibrary.co.uk

45 The mean of 6 numbers is 27. 5 of the numbers are 31, 28, 28, 31, 23.

What is the other number?

Answer: ___

(2)

---

46 Hana records the minutes spent on homework each night over 4 days: 20, 20, 15, 13.

On the next day Hana does 25. What is the mean of all 5 days?

Answer: ___

(2)

---

47 The table shows the number of books borrowed for four groups.

Red: 234
Blue: 791
Green: 150
Yellow: 500

What is the difference between the highest and the lowest books?

Answer: ___

(2)

© Revision Library | revisionlibrary.co.uk

48 Here are 5 heights in cm: 23, 58, 38, 6, 13.

What is the range?

Answer: ___ cm

(1)

---

49 A line graph shows the water in a tank in litres at different times. The points on the graph are: 8:00 = 14, 9:00 = 13, 10:00 = 19, 11:00 = 18, 12:00 = 19, 13:00 = 25.

At what time was the value highest?

Answer: ___

(1)

---

50 Femi records the minutes spent on homework each night over 5 days: 17, 20, 16, 21, 16.

On the next day Femi does 28. What is the mean of all 6 days?

Answer: ___

(2)

---

51 A pie chart shows how 45 people answered a survey. The sector for those who chose tea has an angle of 280 degrees.

How many people chose tea?

Answer: ___

(2)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 9.5 Statistics: Pie Charts and the Mean: 2-hour Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

Scale found: 2 hours -> 30 degrees or 1 hour -> 15 degrees	M1
60 degrees cao	A1

Answer: **60**

Question 2

uses the key	M1
adds the three values	M1
26 cao	A1

Answer: **26**

Question 3

360 divided by the total	M1
132 degrees cao	A1

Answer: **132 degrees**

Question 4

24 x 7 = 168 seen	M1
33 cao	A1

Answer: **33**

Question 5

360 divided by the total	M1
54 degrees cao	A1

Answer: **54 degrees**

Question 6

angle as a fraction of 360	M1
210 cao	A1

Answer: **210**

Question 7

25 x 7 = 175 seen	M1
27 cao	A1

Answer: **27**

Question 8

adds the boys and girls	M1
34 cao	A1

Answer: **34**

Question 9

compares the changes	M1
11:00 cao	A1

Answer: **11:00**

Question 10

360 divided by the total	M1
150 degrees cao	A1

Answer: **150 degrees**

Question 11

divides by the key	M1
3 cao	A1

Answer: **3**

Question 12

identifies the highest and lowest	M1
634 cao	A1

Answer: **634**

Question 13

360 divided by the total	M1
8 degrees cao	A1

Answer: **8 degrees**

Question 14

total 86 seen	M1
21.5 cao	A1

Answer: **21.5**

Question 15

128 seen	M1
32 cao	A1

Answer: **32**

Question 16

total 68 seen	M1
13.6 cao	A1

Answer: **13.6**

Question 17

adds the boys	M1
adds all four	M1
66 cao	A1

Answer: **66**

Question 18

Total goals found: mean x number = 3 x 5 = 15	M1
9 cao	A1

Answer: **9**

Question 19

adds both boys' values	M1
39 cao	A1

Answer: **39**

Question 20

adds at least two values	M1
adds all four values	M1
2,948 cao	A1

Answer: **2,948**

© Revision Library | revisionlibrary.co.uk

Question 21

642 cao — **B1**

Answer: **642**

Question 22

13 litres cao — **B1**

Answer: **13 litres**

Question 23

total 48 seen — **M1**

9.6 cao — **A1**

Answer: **9.6**

Question 24

23 + 13 - 6 = 30 seen — **M1**

7 cao — **A1**

Answer: **7**

Question 25

angle as a fraction of 360 — **M1**

5 cao — **A1**

Answer: **5**

Question 26

360 divided by the total — **M1**

330 degrees cao — **A1**

Answer: **330 degrees**

Question 27

subtraction seen — **M1**

185 cao — **A1**

Answer: **185**

Question 28

Sum and division shown, e.g. (7+9+12+8+14) / 5 — **M1**

10 cao — **A1**

Answer: **10**

Question 29

1,832 cao — **B1**

Answer: **1,832**

Question 30

divides by the key — **M1**

2 cao — **A1**

Answer: **2**

Question 31

divides by the key — **M1**

3 cao — **A1**

Answer: **3**

Question 32

47 cm cao — **B1**

Answer: **47 cm**

Question 33

360 divided by the total — **M1**

320 degrees cao — **A1**

Answer: **320 degrees**

Question 34

total 53 seen — **M1**

10.6 cao — **A1**

Answer: **10.6**

Question 35

24 cao — **B1**

Answer: **24**

Question 36

817 cao — **B1**

Answer: **817**

Question 37

108/360 x 100% method or angle/360 x 100% seen — **M1**

30% cao — **A1**

Answer: **30%**

Question 38

22 + 15 - 14 = 23 seen — **M1**

11 cao — **A1**

Answer: **11**

Question 39

identifies the highest and lowest — **M1**

651 cao — **A1**

Answer: **651**

Question 40

360 divided by the total — **M1**

239 degrees cao — **A1**

Answer: **239 degrees**

Question 41

13:00 cao — **B1**

Answer: **13:00**

Question 42

finds the difference between the two values — **M1**

4 degrees cao — **A1**

Answer: **4 degrees**

Question 43

323 cao — **B1**

Answer: **323**

Question 44

total 43 seen — **M1**

8.6 cao — **A1**

Answer: **8.6**

© Revision Library | revisionlibrary.co.uk

Question 45

27 x 6 = 162 seen	**M1**
21 cao	**A1**

Answer: **21**

Question 46

total 93 seen	**M1**
18.6 cao	**A1**

Answer: **18.6**

Question 47

identifies the highest and lowest	**M1**
641 cao	**A1**

Answer: **641**

Question 48

52 cm cao	**B1**

Answer: **52 cm**

Question 49

13:00 cao	**B1**

Answer: **13:00**

Question 50

total 118 seen	**M1**
19 2/3 or 59/3 cao (accept 19.7 or better)	**A1**

Answer: **19 2/3**

Question 51

angle as a fraction of 360	**M1**
35 cao	**A1**

Answer: **35**

© Revision Library | revisionlibrary.co.uk