9.5 Statistics: Pie Charts and the Mean: Test Pack

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. 1/4 of the pie is by bus. How many pupils travel by bus?

(1)

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2 A pie chart shows how 40 pupils answered a survey. The sector for those who voted for football has an angle of 45 degrees.

How many pupils voted for football?

Answer: ___

(2)

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3 A pie chart shows how 30 children answered a survey. The sector for those who walk to school has an angle of 60 degrees.

How many children walk to school?

Answer: ___

(2)

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4 A school club survey is shown.

Boys: 29 chose Chess, 24 chose Drama
Girls: 17 chose Chess, 6 chose Drama

How many pupils were surveyed altogether?

Answer: ___

(3)

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5 A line graph shows the height of a plant in cm at different times. The points on the graph are: 8:00 = 7, 9:00 = 11, 10:00 = 13, 11:00 = 13, 12:00 = 18, 13:00 = 18.

By how much did it change between 10:00 and 13:00? Write a positive number.

Answer: ___ cm

(2)

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6 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)

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7 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)

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

Year 3: (*) (*) (*) (half)
Year 4: (*) (*)
Year 5: (*) (*) (half)

How many whole symbols are needed to show 100 items?

Answer: ___

(2)

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9 A line graph shows the height of a plant in cm at different times. The points on the graph are: 8:00 = 9, 9:00 = 7, 10:00 = 10, 11:00 = 12, 12:00 = 12, 13:00 = 14.

What was the value at 8:00?

Answer: ___ cm

(1)

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10 A line graph shows the water in a tank in litres at different times. The points on the graph are: 8:00 = 16, 9:00 = 16, 10:00 = 15, 11:00 = 15, 12:00 = 21, 13:00 = 18.

By how much did it change between 9:00 and 13:00? Write a positive number.

Answer: ___ litres

(2)

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11 The table shows the points scored for four groups.

Spring: 811
Summer: 566
Autumn: 549
Winter: 789

How many points were there for Spring and Autumn together?

Answer: ___

(2)

---

12 George records the minutes spent on homework each night over 3 days: 15, 15, 6.

On the next day George does 18. What is the mean of all 4 days?

Answer: ___

(2)

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

(2)

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14 180 children answered a survey. 173 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)

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

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

How many items are shown altogether?

Answer: ___

(3)

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

Spring: 163
Summer: 447
Autumn: 47
Winter: 801

What is the total for all four groups?

Answer: ___

(2)

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

Mon: (*) (*)
Tue: (*) (*) (*) (*) (half)
Wed: (*) (*)

How many items are shown altogether?

Answer: ___

(3)

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18 The mean of 6 numbers is 10. 5 of the numbers are 9, 14, 12, 9, 12.

What is the other number?

Answer: ___

(2)

---

19 A line graph shows the temperature in degrees Celsius at different times. The points on the graph are: 8:00 = 15, 9:00 = 19, 10:00 = 16, 11:00 = 18, 12:00 = 23, 13:00 = 20.

What was the value at 9:00?

Answer: ___ degrees

(1)

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20 A pie chart shows how 60 pupils answered a survey. The sector for those who voted for football has an angle of 60 degrees.

How many pupils voted for football?

Answer: ___

(2)

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21 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)

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22 A line graph shows the temperature in degrees Celsius at different times. The points on the graph are: 8:00 = 18, 9:00 = 17, 10:00 = 22, 11:00 = 22, 12:00 = 22, 13:00 = 26.

At what time was the value highest?

Answer: ___

(1)

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23 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 = 21, 11:00 = 20, 12:00 = 24, 13:00 = 24.

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

Answer: ___

(2)

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Mark scheme · 9.5 Statistics: Pie Charts and the Mean: Test Pack

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

Question 1

10 cao	B1

Answer: **10**

Question 2

angle as a fraction of 360	M1
5 cao	A1

Answer: **5**

Question 3

angle as a fraction of 360	M1
5 cao	A1

Answer: **5**

Question 4

adds the boys	M1
adds all four	M1
76 cao	A1

Answer: **76**

Question 5

finds the difference between the two values	M1
5 cm cao	A1

Answer: **5 cm**

Question 6

72/360 x 80 or equivalent method seen	M1
16 cao	A1

Answer: **16**

Question 7

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	B1

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 8

divides by the key	M1
5 cao	A1

Answer: **5**

Question 9

9 cm cao	B1

Answer: **9 cm**

Question 10

finds the difference between the two values	M1
2 litres cao	A1

Answer: **2 litres**

Question 11

addition seen	M1
1,360 cao	A1

Answer: **1,360**

Question 12

total 54 seen	M1
13.5 cao	A1

Answer: **13.5**

Question 13

30 x 40% or 30 x 0.4 seen	M1
12 cao	A1

Answer: **12**

Question 14

360 divided by the total	M1
346 degrees cao	A1

Answer: **346 degrees**

Question 15

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

Answer: **70**

Question 16

adds at least two values	M1
1,458 cao	A1

Answer: **1,458**

Question 17

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

Answer: **170**

Question 18

10 x 6 = 60 seen	M1
4 cao	A1

Answer: **4**

Question 19

19 degrees cao	B1

Answer: **19 degrees**

Question 20

angle as a fraction of 360	M1
10 cao	A1

Answer: **10**

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Question 21

45/360 x 24 seen	**M1**
3 cao	**A1**

Answer: **3**

Question 22

13:00 cao	**B1**

Answer: **13:00**

Question 23

compares the changes	**M1**
9:00 cao	**A1**

Answer: **9:00**

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