6.1 Statistics: 2-hour Pack

Calculator allowed · about 120 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Here are some numbers: 11, 3, 11, 15, 5, 10, 7, 17.
Work out (a) the mode and (b) the range.

(2)

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2 Here are some numbers: 7, 24, 10, 3, 3, 14, 12, 3.
Work out (a) the mode and (b) the range.

(2)

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3 A bar chart shows the number of pupils in a class who own each type of pet: dogs 8, cats 3, fish 23, rabbits 29, hamsters 9.
Work out the mean number of pupils per pet type.

(3)

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4 The table shows the number of pets for a group of people.
number of pets = 0: frequency 11; number of pets = 1: frequency 7; number of pets = 2: frequency 10; number of pets = 3: frequency 5.
Work out the total frequency and the mode.

(2)

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5 Here are 6 numbers: 10, 48, 11, 52, 13, 36.
Work out the median.

(2)

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6 The table shows the number of goals for a group of people.
number of goals = 2: frequency 12; number of goals = 3: frequency 10; number of goals = 4: frequency 3; number of goals = 5: frequency 7; number of goals = 6: frequency 7; number of goals = 7: frequency 10.
Work out the total frequency and the mode.

(2)

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7 The table shows the number of books read for a group of people.
number of books read = 2: frequency 9; number of books read = 3: frequency 1; number of books read = 4: frequency 5; number of books read = 5: frequency 3; number of books read = 6: frequency 4; number of books read = 7: frequency 7.
Work out the median.

(3)

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8 Here are some numbers: 16, 16, 8, 22, 2, 24, 19.
Work out (a) the mode and (b) the range.

(2)

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9 Here are 10 numbers: 5, 3, 52, 5, 7, 24, 24, 35, 43, 7.
Work out the median.

(2)

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10 In a pie chart of the favourite sports of 36 pupils, the sector for football has an angle of 150°. How many pupils chose football?

(2)

---

11 For each set of data, say whether it is categorical, discrete or continuous.
(a) the number of cars in a car park
(b) the favourite colours of pupils

(2)

---

12 90 pupils chose a favourite sport: tennis 12, hockey 26, athletics 52. Work out the three angles needed to draw a pie chart.

(3)

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13 The table shows the number of goals for a group of people.
number of goals = 1: frequency 2; number of goals = 2: frequency 10; number of goals = 3: frequency 2; number of goals = 4: frequency 1.
Work out the total frequency and the mode.

(2)

---

14 In a pie chart of the favourite sports of 24 pupils, the sector for athletics has an angle of 60°. How many pupils chose athletics?

(2)

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15 Here are some numbers: 21, 13, 13, 13, 9, 20, 8.
Work out (a) the mode and (b) the range.

(2)

---

16 90 pupils chose a favourite sport: tennis 23, athletics 22, swimming 45. Work out the three angles needed to draw a pie chart.

(3)

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17 A bar chart shows the number of pupils in a class who own each type of pet: dogs 19, cats 29, fish 13, rabbits 9, hamsters 5.
Work out the mean number of pupils per pet type.

(3)

---

18 For each set of data, say whether it is categorical, discrete or continuous.
(a) the lengths of leaves
(b) the types of pet owned

(2)

---

19 A pie chart shows how 180 pupils get to school. The angle for walking is 162°. What percentage walk? Give your answer to the nearest whole number if needed.

(2)

---

20 Here are 7 numbers: 36, 4, 36, 60, 6, 1, 31.
Work out the median.

(2)

---

21 40 pupils chose a favourite sport: netball 4, tennis 12, hockey 24. Work out the three angles needed to draw a pie chart.

(3)

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22 The table shows the number of pets for a group of people.
number of pets = 3: frequency 11; number of pets = 4: frequency 2; number of pets = 5: frequency 9; number of pets = 6: frequency 6.
Work out the total frequency and the mode.

(2)

---

23 Here are 7 numbers: 59, 17, 45, 48, 8, 18, 10.
Work out the median.

(2)

---

24 Here are some numbers of goals scored by a team in different matches: 27, 26, 31, 16, 33, 3, 39.
Work out the mean.

(2)

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25 For each set of data, say whether it is categorical, discrete or continuous.
(a) the number of cars in a car park
(b) the lengths of leaves

(2)

---

26 45 pupils were asked to choose their favourite sport. 6 chose tennis. Work out the angle for tennis in a pie chart.

(2)

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27 Here are some daily temperatures in a town in degrees Celsius: 5, 32, 12, 27, 27, 21, 31, 27.
Work out the mean.

(2)

---

28 Here are some test scores: 9, 12, 32, 37, 8, 11, 18, 17.
Work out the mean.

(2)

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29 A bar chart shows the number of pupils in a class who own each type of pet: dogs 19, cats 12, fish 15, rabbits 15, hamsters 8.
How many more pupils own dogs than hamsters?

(2)

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30 A bar chart shows the number of pupils in a class who own each type of pet: dogs 24, cats 26, fish 18, rabbits 30, hamsters 16.
Work out the total number of pets owned.

(2)

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31 Here are some daily temperatures in a town in degrees Celsius: 13, 38, 4, 35, 13, 37, 24, 18.
Work out the mean.

(2)

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32 Here are some ages of players in a squad in years: 33, 11, 4, 27, 26, 22.
Work out the mean.

(2)

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33 For each set of data, say whether it is categorical, discrete or continuous.
(a) the number of siblings pupils have
(b) the make of car owned by staff

(2)

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34 Here are some numbers: 5, 15, 22, 6, 23, 5, 8, 2, 3, 13.
Work out (a) the mode and (b) the range.

(2)

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35 A bar chart shows the number of pupils in a class who own each type of pet: dogs 7, cats 6, fish 19, rabbits 25, hamsters 13.
Work out the total number of pets owned.

(2)

---

36 A bar chart shows the number of pupils in a class who own each type of pet: dogs 12, cats 12, fish 5, rabbits 3, hamsters 21.
How many more pupils own dogs than rabbits?

(2)

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37 The table shows the number of books read for a group of people.
number of books read = 1: frequency 9; number of books read = 2: frequency 2; number of books read = 3: frequency 1; number of books read = 4: frequency 5; number of books read = 5: frequency 10; number of books read = 6: frequency 1.
Work out the range.

(2)

---

38 20 pupils were asked to choose their favourite sport. 10 chose hockey. Work out the angle for hockey in a pie chart.

(2)

---

39 180 pupils were asked to choose their favourite sport. 49 chose swimming. Work out the angle for swimming in a pie chart.

(2)

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40 A survey of 40 people asked their favourite drink. The results are: Tea 10, Coffee 14, Juice 8, Water 8. This data is to be shown on a pie chart.

(a) Work out the angle that should be used to represent Tea. **(2)**

.....

(b) Work out the angle that should be used to represent Coffee. **(1)**

.....

(c) Work out the combined angle used to represent Juice and Water together. **(2)**

.....

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41 Kwame drew a pie chart to show the pets owned by pupils in his year group. The Dog sector has an angle of 108 degrees, representing 27 pupils.

(a) Work out how many degrees on the pie chart represent 1 pupil. **(2)**

.....

(b) The Cat sector has an angle of 72 degrees. Work out the number of pupils who own a cat. **(2)**

.....

(c) Work out the total number of pupils surveyed for the pie chart. **(2)**

.....

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Mark scheme · 6.1 Statistics: 2-hour Pack

Question 1

(a) 11	B1
(b) 14	B1

Answer: **(a) 11, (b) 14**

Question 2

(a) 3	B1
(b) 21	B1

Answer: **(a) 3, (b) 21**

Question 3

adds the five values	M1
72 ÷ 5	M1
14.4 cao	A1

Answer: **14.4**

Question 4

total 33	B1
mode 0	B1

Answer: **total 33, mode 0**

Question 5

puts the numbers in order: 10, 11, 13, 36, 48, 52	M1
24.5 cao	A1

Answer: **24.5**

Question 6

total 49	B1
mode 2	B1

Answer: **total 49, mode 2**

Question 7

29 values in total, median at position 15	M1
cumulative frequency used	M1
4 cao	A1

Answer: **4**

Question 8

(a) 16	B1
(b) 22	B1

Answer: **(a) 16, (b) 22**

Question 9

puts the numbers in order: 3, 5, 5, 7, 7, 24, 24, 35, 43, 52	M1
15.5 cao	A1

Answer: **15.5**

Question 10

150/360 x 36	M1
15 cao	A1

Answer: **15**

Question 11

(a) discrete	B1
(b) categorical	B1

Answer: **(a) discrete, (b) categorical**

Question 12

360 ÷ 90 = 4 degrees per pupil	M1
two angles correct	A1
48°, 104°, 208° cao	A1

Answer: **48°, 104°, 208°**

Question 13

total 15	B1
mode 2	B1

Answer: **total 15, mode 2**

Question 14

60/360 x 24	M1
4 cao	A1

Answer: **4**

Question 15

(a) 13, the most frequent value	B1
(b) 21 - 8 = 13	B1

Answer: **(a) 13, (b) 13**

Question 16

360 ÷ 90 = 4 degrees per pupil	M1
two angles correct	A1
92°, 88°, 180° cao	A1

Answer: **92°, 88°, 180°**

Question 17

adds the five values	M1
75 ÷ 5	M1
15 cao	A1

Answer: **15**

Question 18

(a) continuous	B1
(b) categorical	B1

Answer: **(a) continuous, (b) categorical**

Question 19

162/360	M1
45% cao	A1

Answer: **45%**

Question 20

puts the numbers in order: 1, 4, 6, 31, 36, 36, 60	M1
31 cao	A1

Answer: **31**

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Question 21

360 ÷ 40 = 9 degrees per pupil	**M1**
two angles correct	**A1**
36°, 108°, 216° cao	**A1**

Answer: **36°, 108°, 216°**

Question 22

total 28	**B1**
mode 3	**B1**

Answer: **total 28, mode 3**

Question 23

puts the numbers in order: 8, 10, 17, 18, 45, 48, 59	**M1**
18 cao	**A1**

Answer: **18**

Question 24

adds all 7 values: 175	**M1**
25 cao	**A1**

Answer: **25**

Question 25

(a) discrete	**B1**
(b) continuous	**B1**

Answer: **(a) discrete, (b) continuous**

Question 26

360 ÷ 45 = 8 per pupil or 6/45 x 360	**M1**
48° cao	**A1**

Answer: **48°**

Question 27

adds all 8 values: 182	**M1**
22.75 cao	**A1**

Answer: **22.75**

Question 28

adds all 8 values: 144	**M1**
18 cao	**A1**

Answer: **18**

Question 29

19 - 8 (or the reverse)	**M1**
11 cao	**A1**

Answer: **11**

Question 30

adds the five values	**M1**
114 cao	**A1**

Answer: **114**

Question 31

adds all 8 values: 182	**M1**
22.75 cao	**A1**

Answer: **22.75**

Question 32

adds all 6 values: 123	**M1**
20.5 cao	**A1**

Answer: **20.5**

Question 33

(a) discrete	**B1**
(b) categorical	**B1**

Answer: **(a) discrete, (b) categorical**

Question 34

(a) 5	**B1**
(b) 21	**B1**

Answer: **(a) 5, (b) 21**

Question 35

adds the five values	**M1**
70 cao	**A1**

Answer: **70**

Question 36

12 - 3 (or the reverse)	**M1**
9 cao	**A1**

Answer: **9**

Question 37

6 - 1	**M1**
5 cao	**A1**

Answer: **5**

Question 38

360 ÷ 20 = 18 per pupil or 10/20 x 360	**M1**
180° cao	**A1**

Answer: **180°**

Question 39

360 ÷ 180 = 2 per pupil or 49/180 x 360	**M1**
98° cao	**A1**

Answer: **98°**

Question 40

(a) 360/40 = 9 (degrees per person), then 10 x 9	**M1**
(a) 90 degrees cao	**A1**
(a) Answer: **90 degrees**	
(b) 126 degrees cao, ft using 9 degrees per person	**B1**
(b) Answer: **126 degrees**	
(c) (8+8) x 9, ft using 9 degrees per person	**M1**
(c) 144 degrees cao	**A1**
(c) Answer: **144 degrees**	

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Question 41

(a) 108/27 (correct method) **M1**

(a) 4 degrees cao **A1**

(a) Answer: **4 degrees**

(b) 72/4, ft from part a **M1**

(b) 18 cao **A1**

(b) Answer: **18**

(c) 360/4, ft from part a **M1**

(c) 90 cao **A1**

(c) Answer: **90**

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