9.1 Reasoning: Statistics: 2-hour Pack

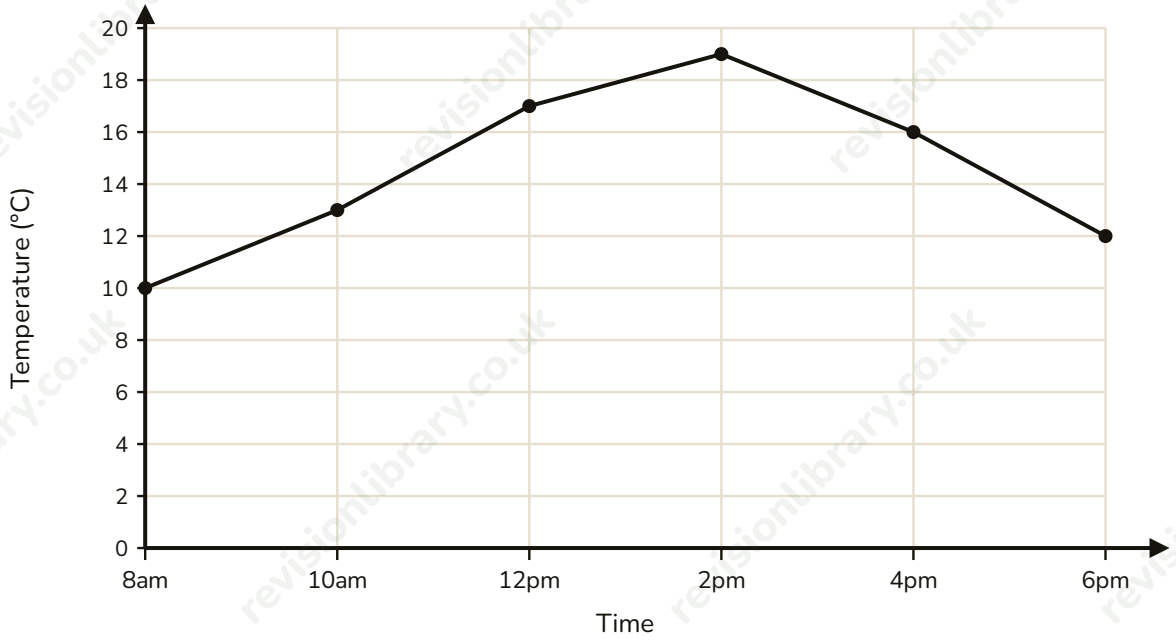
STA NC-KS2-MA-STATS · Calculators not allowed · about 120 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 The line graph shows the temperature, in degrees Celsius, at a school in Leeds during one day.



(a) At what time was the temperature highest? **(1)**

.....

(b) Work out the difference in temperature between 8am and 2pm. **(2)**

.....

(c) Describe what happens to the temperature between 2pm and 6pm. **(1)**

.....

.....

.....

.....

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

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

How many more items does Wed show than Mon?

Answer: ___

(3)

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3 A school club survey is shown.

Boys: 6 chose Swimming, 7 chose Tennis
Girls: 22 chose Swimming, 13 chose Tennis

How many more pupils chose Swimming than Tennis?

Answer: ___

(2)

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4 The mean of 6 numbers is 27. 5 of the numbers are 30, 25, 26, 24, 28.

What is the other number?

Answer: ___

(2)

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5 The table shows the points scored for four groups.

Spring: 14
Summer: 782
Autumn: 197
Winter: 792

How many points were there for Summer and Spring together?

Answer: ___

(2)

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

Bus: 8
Car: 67
Walk: 89
Bike: 59

What is the total for all four groups?

Answer: ___

(2)

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7 A line graph shows the height of a plant in cm at different times. The points on the graph are: 8:00 = 8, 9:00 = 13, 10:00 = 15, 11:00 = 14, 12:00 = 17, 13:00 = 18.

By how much did it change between 8:00 and 12:00? Write a positive number.

Answer: ___ cm

(2)

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8 The mean mark of 4 pupils in a test is 4.

What is the total of their marks?

Answer: ___

(1)

---

9 The table shows the points scored for four groups.

North: 64
South: 80
East: 90
West: 85

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

Answer: ___

(2)

---

10 Nia records the books read each week over 3 days: 27, 28, 20.

On the next day Nia does 31. What is the mean of all 4 days?

Answer: ___

(2)

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11 A pie chart shows how 24 children answered a survey. The sector for those who walk to school has an angle of 75 degrees.

How many children walk to school?

Answer: ___

(2)

---

12 In a class of 25 pupils, 17 like art, 6 like music and 5 like both.

How many pupils like neither?

Answer: ___

(2)

---

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

Bus: 84
Car: 86
Walk: 62
Bike: 61

How many more litres were there for Walk than for Bike?

Answer: ___

(2)

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14 Part of a train timetable is shown.

Fenwick: 14:35
Carlow: 14:52
Hollin: 15:05
Bridgton: 15:26

How many minutes does the train take to travel from Fenwick to Carlow?

Answer: ___ minutes

(2)

---

15 A pictogram uses (*) for 2 items and (half) for 1 items.

Bus: (*) (*)
Car: (*) (*) (*) (*) (*) (half)
Walk: (*) (*) (*) (*)

How many items are shown altogether?

Answer: ___

(3)

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16 The table shows the tickets sold for four groups.

North: 84
South: 29
East: 81
West: 52

What is the total for all four groups?

Answer: ___

(1)

---

17 A line graph shows the temperature in degrees Celsius at different times. The points on the graph are: 8:00 = 5, 9:00 = 10, 10:00 = 14, 11:00 = 16, 12:00 = 20, 13:00 = 23.

What was the value at 9:00?

Answer: ___ degrees

(1)

---

18 Femi records the points scored in a game each round over 3 days: 23, 27, 22.

On the next day Femi does 30. What is the mean of all 4 days?

Answer: ___

(2)

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19 60 children answered a survey. 16 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)

---

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

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

How many more items does Year 3 show than Year 5?

Answer: ___

(3)

---

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

By how much did it change between 8:00 and 12:00? Write a positive number.

Answer: ___ degrees

(2)

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22 72 people answered a survey. 21 of them chose tea. In a pie chart this is shown as a sector.

What is the angle of the sector?

Answer: ___ degrees

(2)

---

23 45 pupils answered a survey. 18 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)

---

24 The table shows the points scored for four groups.

Mon: 78
Tue: 77
Wed: 36
Thu: 45

How many more points were there for Mon than for Tue?

Answer: ___

(2)

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

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

How many whole symbols are needed to show 220 items?

Answer: ___

(2)

---

26 The mean mark of 4 pupils in a test is 33.

What is the total of their marks?

Answer: ___

(1)

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27 Hassan records the books read each week over 3 days: 13, 15, 20.

On the next day Hassan does 22. What is the mean of all 4 days?

Answer: ___

(2)

---

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

Red: 512
Blue: 754
Green: 326
Yellow: 447

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

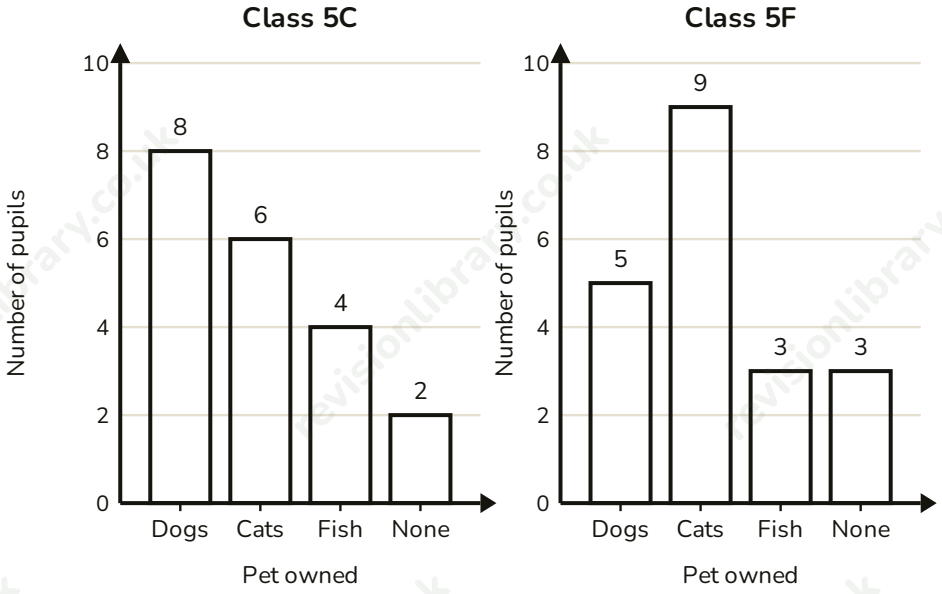
Answer: ___

(2)

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29 Two classes were asked what pets they own. The bar charts show the results for Class 5C and Class 5F (20 pupils in each class).

Class 5C: Dogs 8, Cats 6, Fish 4, None 2
Class 5F: Dogs 5, Cats 9, Fish 3, None 3



(a) Which class has more pupils who own a cat? **(1)**

.....

(b) Work out how many more pupils, across both classes combined, own a dog than own a fish. **(2)**

.....

---

30 40 children answered a survey. 31 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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31 Part of a train timetable is shown.

Ashby: 06:25
Eastleigh: 06:52
Fenwick: 07:00
Dunmere: 07:20

How many minutes does the train take to travel from Eastleigh to Dunmere?

Answer: ___ minutes

(2)

---

32 Chloe records the points scored in a game each round over 5 days: 14, 12, 13, 14, 7.

On the next day Chloe does 22. What is the mean of all 6 days?

Answer: ___

(2)

---

33 In a class of 26 pupils, 13 like swimming, 14 like cycling and 6 like both.

How many pupils like neither?

Answer: ___

(2)

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

Bus: 38
Car: 11
Walk: 49
Bike: 69

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

Answer: ___

(2)

---

35 A school club survey is shown.

Boys: 19 chose Football, 6 chose Netball
Girls: 24 chose Football, 16 chose Netball

How many pupils chose Football?

Answer: ___

(2)

---

36 A pie chart shows how 36 people answered a survey. The sector for those who chose tea has an angle of 300 degrees.

How many people chose tea?

Answer: ___

(2)

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

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

How many more items does Autumn show than Summer?

Answer: ___

(3)

---

38 Part of a train timetable is shown.

Eastleigh: 11:30
Bridgton: 11:41
Ashby: 11:49
Carlow: 12:02

Kiran arrives at Eastleigh station at 11:13.

How many minutes must they wait for the train?

Answer: ___ minutes

(2)

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39 A pictogram uses (*) for 2 items and (half) for 1 items.

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

How many items are shown altogether?

Answer: ___

(3)

---

40 A line graph shows the temperature in degrees Celsius at different times. The points on the graph are: 8:00 = 10, 9:00 = 12, 10:00 = 15, 11:00 = 14, 12:00 = 19, 13:00 = 16.

At what time was the value highest?

Answer: ___

(1)

---

41 A line graph shows the temperature in degrees Celsius at different times. The points on the graph are: 8:00 = 17, 9:00 = 19, 10:00 = 25, 11:00 = 22, 12:00 = 21, 13:00 = 18.

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

Answer: ___ degrees

(2)

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42 Here are 7 number of goals scored: 22, 23, 37, 29, 22, 27, 22.

What is the mean?

Answer: ___

(2)

---

43 Part of a train timetable is shown.

Eastleigh: 11:05
Carlow: 11:38
Dunmere: 12:07
Grange: 12:22

Olu arrives at Eastleigh station at 10:48.

How many minutes must they wait for the train?

Answer: ___ minutes

(2)

---

44 The table shows the points scored for four groups.

North: 66
South: 89
East: 52
West: 83

What is the total for all four groups?

Answer: ___

(1)

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45 The table shows the points scored for four groups.

North: 40
South: 29
East: 71
West: 41

What is the total for all four groups?

Answer: ___

(2)

---

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

Spring: 75
Summer: 36
Autumn: 46
Winter: 87

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

Answer: ___

(2)

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Mark scheme · 9.1 Reasoning: Statistics: 2-hour Pack

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

Question 1

(a) 2pm cao — **B1**

(a) Answer: **2pm**

(b) 19 - 10 seen — **M1**

(b) 9C cao — **A1**

(b) Answer: **9C**

(c) it decreases/falls, oe (any correct description that the temperature drops) — **B1**

(c) Answer: **The temperature decreases (falls) from 19C to 12C.**

Question 2

uses the key — **M1**

subtracts — **M1**

10 cao — **A1**

Answer: **10**

Question 3

both totals found — **M1**

8 cao — **A1**

Answer: **8**

Question 4

27 x 6 = 162 seen — **M1**

29 cao — **A1**

Answer: **29**

Question 5

addition seen — **M1**

796 cao — **A1**

Answer: **796**

Question 6

adds at least two values — **M1**

223 cao — **A1**

Answer: **223**

Question 7

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

9 cm cao — **A1**

Answer: **9 cm**

Question 8

16 cao — **B1**

Answer: **16**

Question 9

identifies the highest and lowest — **M1**

26 cao — **A1**

Answer: **26**

Question 10

total 106 seen — **M1**

26.5 cao — **A1**

Answer: **26.5**

Question 11

angle as a fraction of 360 — **M1**

5 cao — **A1**

Answer: **5**

Question 12

17 + 6 - 5 = 18 seen — **M1**

7 cao — **A1**

Answer: **7**

Question 13

subtraction seen — **M1**

1 cao — **A1**

Answer: **1**

Question 14

finds the difference between the two times (counting on or subtracting) — **M1**

17 minutes cao — **A1**

Answer: **17 minutes**

Question 15

uses the key — **M1**

adds the three values — **M1**

23 cao — **A1**

Answer: **23**

Question 16

246 cao — **B1**

Answer: **246**

Question 17

10 degrees cao — **B1**

Answer: **10 degrees**

Question 18

total 102 seen — **M1**

25.5 cao — **A1**

Answer: **25.5**

Question 19

360 divided by the total — **M1**

96 degrees cao — **A1**

Answer: **96 degrees**

Question 20

uses the key — **M1**

subtracts — **M1**

80 cao — **A1**

Answer: **80**

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Question 21

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

Answer: **5 degrees**

Question 22

360 divided by the total	M1
105 degrees cao	A1

Answer: **105 degrees**

Question 23

360 divided by the total	M1
144 degrees cao	A1

Answer: **144 degrees**

Question 24

subtraction seen	M1
1 cao	A1

Answer: **1**

Question 25

divides by the key	M1
11 cao	A1

Answer: **11**

Question 26

132 cao	B1

Answer: **132**

Question 27

total 70 seen	M1
17.5 cao	A1

Answer: **17.5**

Question 28

identifies the highest and lowest	M1
428 cao	A1

Answer: **428**

Question 29

(a) Class 5F cao	B1

(a) Answer: **Class 5F**

(b) Total dogs = 8+5 = 13 and total fish = 4+3 = 7 seen	M1
(b) 6 cao	A1

(b) Answer: **6 pupils**

Question 30

360 divided by the total	M1
279 degrees cao	A1

Answer: **279 degrees**

Question 31

finds the difference between the two times (counting on or subtracting)	M1
28 minutes cao	A1

Answer: **28 minutes**

Question 32

total 82 seen	M1
13 2/3 or 41/3 cao (accept 13.7 or better)	A1

Answer: **13 2/3**

Question 33

13 + 14 - 6 = 21 seen	M1
5 cao	A1

Answer: **5**

Question 34

identifies the highest and lowest	M1
58 cao	A1

Answer: **58**

Question 35

adds the boys and girls	M1
43 cao	A1

Answer: **43**

Question 36

angle as a fraction of 360	M1
30 cao	A1

Answer: **30**

Question 37

uses the key	M1
subtracts	M1
25 cao	A1

Answer: **25**

Question 38

finds the wait between arriving and the departure time (counting on or subtracting)	M1
17 minutes cao	A1

Answer: **17 minutes**

Question 39

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

Answer: **7**

Question 40

12:00 cao	B1

Answer: **12:00**

Question 41

finds the difference between the two values	M1
1 degrees cao	A1

Answer: **1 degrees**

Question 42

182 seen	M1
26 cao	A1

Answer: **26**

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Question 43

finds the wait between arriving and the departure time (counting on or subtracting)	**M1**
17 minutes cao	**A1**

Answer: **17 minutes**

Question 44

290 cao	**B1**

Answer: **290**

Question 45

adds at least two values	**M1**
181 cao	**A1**

Answer: **181**

Question 46

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

Answer: **51**

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