9.1 Reasoning: Statistics: 30-minute Pack

STA NC-KS2-MA-STATS · Calculators not allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 The table shows the number of goals scored by five players in a Sunday league football season.

Priya 12 | Kwame 9 | Freya 15 | Oliver 6 | Isla 11

(a) Who scored the most goals? **(1)**

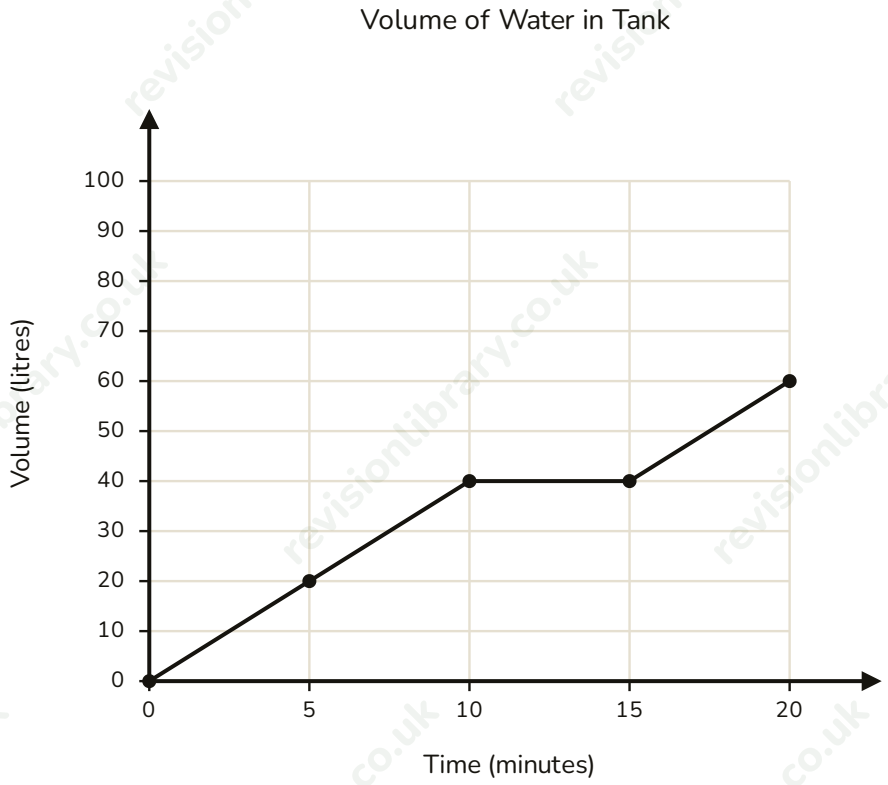
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(b) Work out the range of the number of goals scored. **(1)**

.....

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2 A tank is being filled with water. The line graph shows the volume of water, in litres, in the tank over time.



(a) Between which two times did the volume of water in the tank stay the same? **(1)**

.....

(b) Work out the rate at which the tank was filling, in litres per minute, while the water was flowing. **(2)**

.....

(c) The tank holds 100 litres when full. If the tap continues to flow at the rate found in part (b) from the 20 minute mark, work out how many more minutes it will take until the tank is full. **(3)**

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3 Two teams' scores in five matches were recorded.

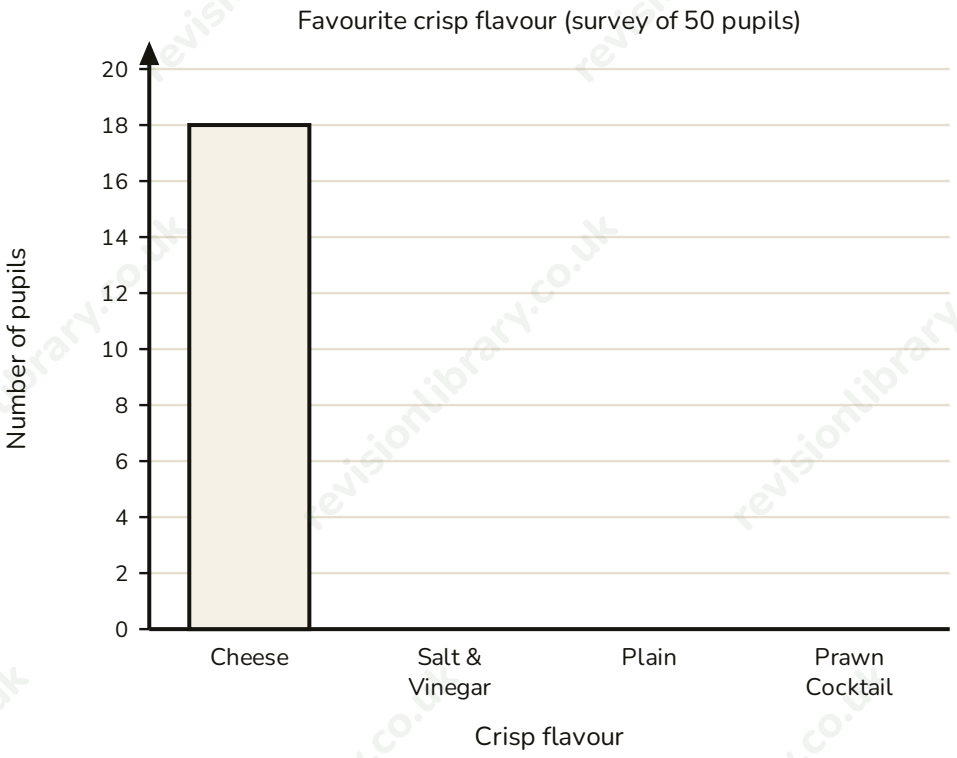
Hawks: 12, 15, 14, 13, 16
Kestrels: 8, 20, 10, 22, 15

(a) Calculate the range of scores for each team. **(2)**

(b) Which team's scores were more consistent? Explain your answer using your ranges from part (a). **(1)**

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4 A survey of 50 pupils' favourite crisp flavour is shown in an incomplete bar chart. Cheese scored 18. Salt & Vinegar scored half of Cheese's total. Plain scored 4 more than Salt & Vinegar. Prawn Cocktail scored the remainder of the 50 pupils.



(a) Work out the missing values for Salt & Vinegar, Plain and Prawn Cocktail. **(3)**

(b) Which flavour was the least popular? **(1)**

.....

.....

5 In a class of 40 pupils, 21 like swimming, 22 like cycling and 3 like both.

How many pupils like neither?

Answer: ___

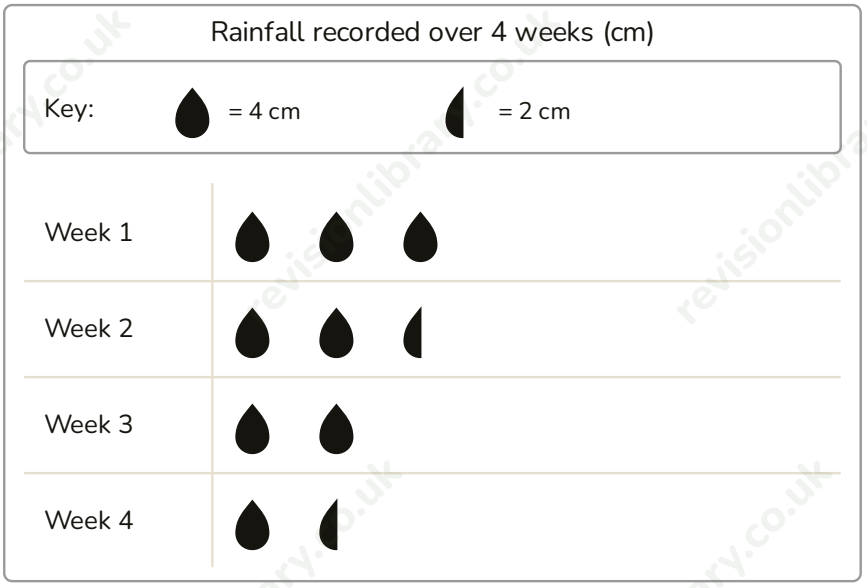
(2)

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6 A rain gauge pictogram shows the rainfall, in cm, collected over 4 weeks.

Key: @ = 4 cm, half@ = 2 cm

Week 1: @ @ @
Week 2: @ @ half@
Week 3: @ @
Week 4: @ half@



(a) How much rain fell in Week 3? **(1)**

.....

(b) The average expected rainfall for a 4-week period at this location is 40 cm. **(3)**
Work out by how much the actual total for these 4 weeks was below average.

.....

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7 A line graph shows the water in a tank in litres at different times. The points on the graph are: 8:00 = 18, 9:00 = 24, 10:00 = 25, 11:00 = 24, 12:00 = 26, 13:00 = 27.

At what time was the value highest?

Answer: ___

(1)

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

Mon: 64
Tue: 70
Wed: 20
Thu: 29

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

Answer: ___

(2)

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9 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 = 14, 10:00 = 12, 11:00 = 12, 12:00 = 13, 13:00 = 15.

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

Answer: ___

(2)

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Mark scheme · 9.1 Reasoning: Statistics: 30-minute Pack

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

Question 1

(a) Freya cao	**B1**
(a) Answer: **Freya**	
(b) 9 cao	**B1**
(b) Answer: **9 goals**	

Question 2

(a) 10 minutes and 15 minutes, oe	**B1**
(a) Answer: **Between 10 minutes and 15 minutes**	
(b) 40 divided by 10 (or 20 divided by 5) seen	**M1**
(b) 4 litres per minute cao	**A1**
(b) Answer: **4 litres per minute**	
(c) 100 - 60 = 40 litres remaining	**M1**
(c) 40 divided by 4 (dependent on correct remaining litres, ft their rate from part (b))	**dM1**
(c) 10 minutes cao	**A1**
(c) Answer: **10 more minutes**	

Question 3

(a) Hawks range = 4 cao	**B1**
(a) Kestrels range = 14 cao	**B1**
(a) Answer: **Hawks range = 4; Kestrels range = 14**	
(b) Hawks, because their range (4) is smaller than the Kestrels' range (14), so their scores vary less/are closer together, oe, ft from part (a)	**B1**
(b) Answer: **Hawks were more consistent, because their range of 4 is much smaller than the Kestrels' range of 14, showing their scores varied less.**	

Question 4

(a) Salt & Vinegar = 9 (half of 18)	**B1**
(a) Plain = 13 (9 + 4), ft their Salt & Vinegar value	**B1**
(a) Prawn Cocktail = 10 (50 - 18 - 9 - 13), ft their values	**B1**
(a) Answer: **Salt & Vinegar = 9; Plain = 13; Prawn Cocktail = 10**	
(b) Salt & Vinegar cao, ft from part (a)	**B1**
(b) Answer: **Salt & Vinegar**	

Question 5

21 + 22 - 3 = 40 seen	**M1**
0 cao	**A1**
Answer: **0**	

Question 6

(a) 8 cm cao	**B1**
(a) Answer: **8 cm**	
(b) total = 12+10+8+6 = 36 cm	**M1**
(b) 40 - 36 (dependent on correct total)	**dM1**
(b) 4 cm cao	**A1**
(b) Answer: **4 cm below average**	

Question 7

13:00 cao	**B1**
Answer: **13:00**	

Question 8

identifies the highest and lowest	**M1**
50 cao	**A1**
Answer: **50**	

Question 9

compares the changes	**M1**
12:00 cao	**A1**
Answer: **12:00**	

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