

## Questions

**Q1.**

Mr Khan asked the 22 students in his class what activity they wanted to do on a school trip.

Here are the results.

bowling	swimming	roller skating	swimming
swimming	bowling	roller skating	roller skating
roller skating	swimming	roller skating	swimming
swimming	cinema	bowling	cinema
cinema	roller skating	swimming	swimming
swimming	bowling		

(a) Complete the frequency table.

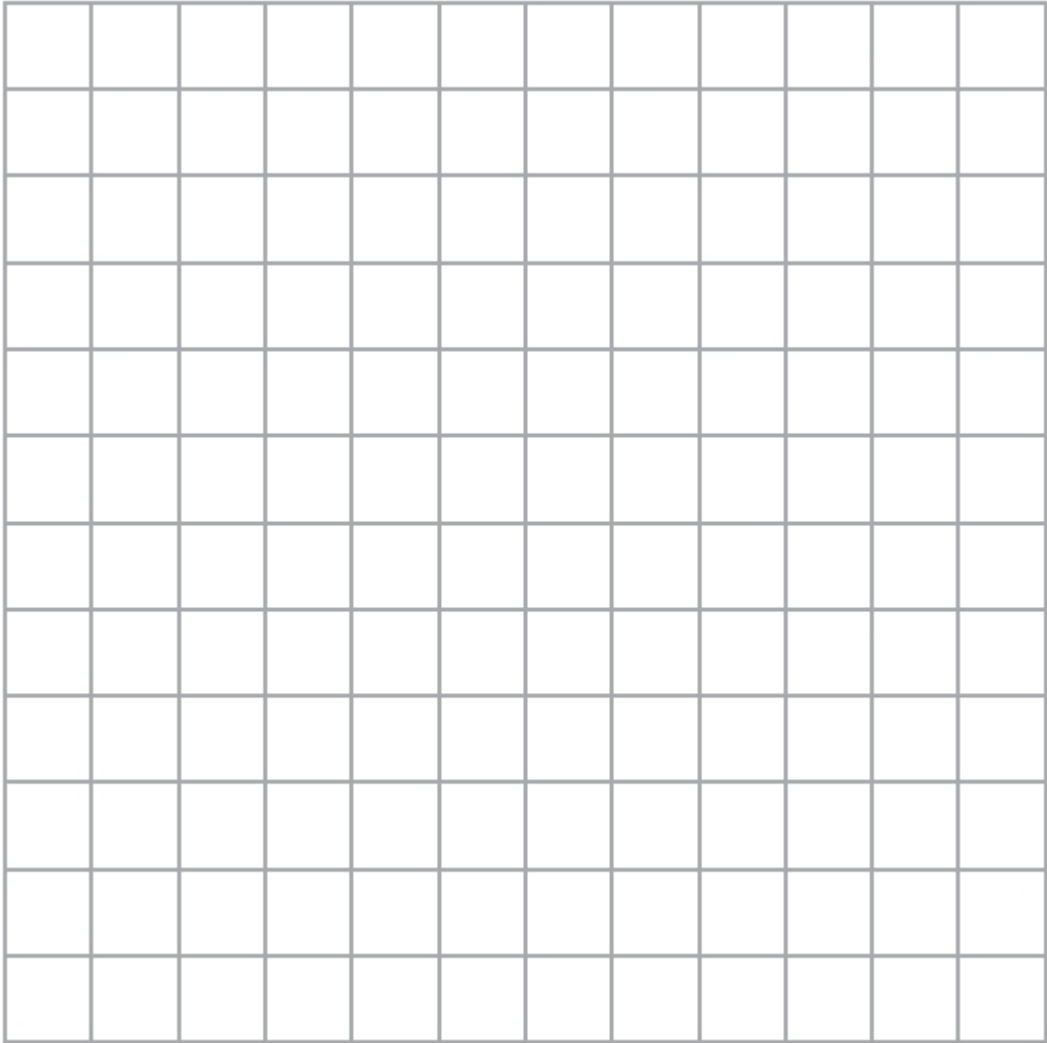
Activity	Tally	Frequency
bowling		
swimming		
roller skating		
cinema		

(2)

(b) Write down the mode.

.....  
(1)

(c) Show the results of Mr Khan's survey in a suitable diagram.



(3)

**(Total for Question is 6 marks)**

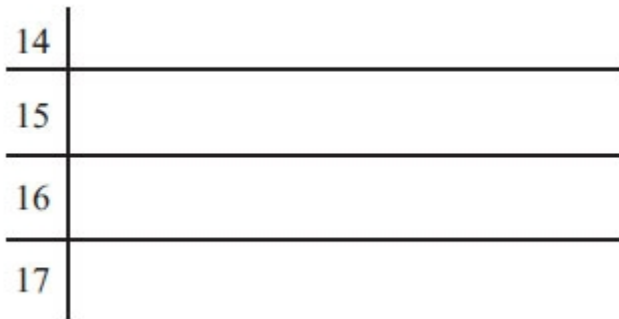
**Q2.**

There are 25 students in a class.  
12 of the students are girls.

Here are the heights, in cm, of the 12 girls.

160 173 148 154 152 164 179 164 162 174 168 170

(a) Show this information in an ordered stem and leaf diagram.



(3)

There are 13 boys in the class.

Here are the heights, in cm, of the 13 boys.

157 159 162 166 168 169 170 173 174 176 176 181 184

\* (b) Compare the heights of the boys with the heights of the girls.

(3)

**(Total for Question is 6 marks)**

**Q3.**

Here is the number of goals a hockey team scored in each of 10 matches.

3   4   3   2   5   3   5   6   2   4

Find

(i) the median

.....

(ii) the range

.....

(iii) the mean

.....

**(Total for Question is 6 marks)**

**Q4.**

Steve went on holiday.  
He recorded the number of photos he took each day.

Here are his results.

20   14   21   19   27   31   19   19   24   21

(a) Find the mode.

.....

**(1)**

(b) Work out the mean.

.....

**(2)**

Steve saves his photos on a memory card.

The memory card has 1000 megabytes of memory space.  
Each photo uses 2.4 megabytes of memory space.

Steve has saved 320 photos on the memory card.

(c) Work out how many more photos Steve can save on the memory card.

.....  
(3)

**(Total for question = 6 marks)**

**Q5.**

The table shows the midday temperature on each day for ten days.

Day	1	2	3	4	5	6	7	8	9	10
Temperature (°C)	13	14	12	10	13	16	14	13	18	16

(a) Find the range of temperatures.

.....°C  
(2)

(b) Write down the mode.

.....°C  
(1)

(c) Work out the mean temperature.

.....°C  
(2)

**(Total for Question is 5 marks)**

**Q6.**

Here is a list of numbers.

12      15      14      17      22      19      13

Bridgit says,

"To work out the median you find the middle number,  
so the median of these numbers is 17"

Bridgit's answer is **not** correct.

(a) What is wrong with Bridgit's method?

.....  
.....

(1)

(b) Work out the range of the numbers in the list.

.....

(2)

(c) Work out the mean of the numbers in the list.

.....

(2)

**(Total for question = 5 marks)**

**Q7.**

Farah recorded the minimum temperature, in °C, on each of seven days in January.

Here are her results.

Day	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Temp (°C)	-2	-1	2	0	-3	4	7

(a) Work out the difference between the temperature on Tuesday and the temperature on Wednesday.

..... °C  
(1)

(b) Work out the mean of the temperatures Farah recorded.

.....°C  
(2)

**(Total for Question is 3 marks)**

**Q8.**

Chris works in a cafe.

At noon one day he records the number of customers sitting at each table in the cafe.

Here are his results.

Number of customers sitting at a table	Number of tables
0	4
1	5
2	10
3	7
4	3
5	1

(a) Work out the total number of tables in the cafe.

.....  
(1)

(b) Work out the total number of customers sitting at tables in the cafe.

.....  
(2)

(c) Work out the mean number of customers sitting at a table.

.....  
(2)

**(Total for Question is 5 marks)**

**Q9.**

Alex is  $x$ cm tall.

Bob is 10cm taller than Alex.

Cath is 4cm shorter than Alex.

Write an expression, in terms of  $x$ , for the mean of their heights in centimetres.

.....

**(Total for question = 3 marks)**



## Mark Scheme

Q1.

Paper_5MB1F_01				
Question	Working	Answer	Mark	Notes
(a)		Correct frequencies: 4,9,6,3	2	B2 for all frequencies correct (B1 for 2 tallies or 2 frequencies correct)
(b)		Swimming or 9	1	B1 ft from frequencies or tallies in (a) or diagram in (c)
(c)		Diagram or chart	3	B1 for labelling horizontal axis with activities B1 for linear scale labelled frequency oe B1 for accurately representing the data ft from their frequencies or tallies in (a)

Q2.

Question	Working	Answer	Mark	Notes
(a)		$\begin{array}{r l} 14 & 8 \\ 15 & 2\ 4 \\ 16 & 0\ 2\ 4\ 4\ 8 \\ 17 & 0\ 3\ 4\ 9 \\ \hline 14 8 = 148\text{ cm} \end{array}$	3	B2 for a fully correct ordered diagram (B1 for correct unordered diagram or ordered with at most two errors) B1 for a correct key eg $14 8 = 148\text{ cm}$ (cm not required)
*(b)	Boy's Median = 170 Girl's Median = 164 Boy's Mean = 170(.38) Girl's Mean = 164 Boy's Range = 27 Girl's Range = 31  $\begin{array}{r l} 15 & 7\ 9 \\ 16 & 2\ 6\ 8\ 9 \\ 17 & 0\ 3\ 4\ 6\ 6 \\ 18 & 1\ 4 \end{array}$	Compares: medians/means + Range + Spread	3	A maximum 2B marks from: B1 for a correct mean or median for either the boys or the girls. B1 for a correct range for either the boys or the girls. B1 for a correct stem and leaf diagram drawn for the boys (no need for a key)  C1 for any correct comparison, which includes the boys and the girls, of either 2 correct (ft) medians or 2 correct (ft) means or 2 correct(ft) ranges or a correct statement following from comparing the correct stem and leaf diagrams, which includes the boys and the girls.

Q3.

	Working	Answer	Mark	Notes
(i)	2 2 3 3 3 4 4 5 5 6 ↑	3.5	6	M1 for ordering the data condone one extra or one omission A1 for 3.5 or $3\frac{1}{2}$
(ii)		4		M1 for $6 - 2$ or $2 - 6$ A1 cao
(iii)		3.7		M1 for $(2+2+3+3+3+4+4+5+5+6) \div 10$ condone missing brackets or $37 \div 10$ A1 for 3.7 or $3\frac{7}{10}$  [SC B1 for 31.6 or 33.4]

Q4.

Question	Working	Answer	Mark	Notes
(a)		19	1	B1 cao
(b)		21.5	2	M1 for evidence of adding all 10 numbers and dividing by 10 eg $(20+14+21+19+27+31+19+19+24+21) \div 10$ or $215 \div 10$ or $x \div 10$ seen where $205 \leq x \leq 225$ A1 cao
(c)		96	3	M1 for $320 \times 2.4 (= 768)$ or for $1000 \div 2.4 (= 416.6$ or $416)$ M1 for $(1000 - 320 \times 2.4) \div 2.4$ or for $1000 \div 2.4 - 320$ or an answer of $96.6(66\dots)$ or $96.7$ or $97$ A1 cao

Q5.

Question	Working	Answer	Mark	Notes
(a)	$18 - 10$	8	2	M1 for $18 - 10$ A1 cao [SC: B1 for 10 to 18, $10 - 18$ , 18 to 10 oe, if M0 scored]
(b)		13	1	B1 cao
(c)	$(13+14+12+10+13+16+14+13+18+16) \div 10$ $= 139 \div 10$	13.9	2	M1 for $(13+14+12+10+13+16+14+13+18+16) \div 10$ $\div 10$ allow one error, omission or extra in 10 temperatures, condone missing brackets. A1 cao

Q6.

Question	Working	Answer	Mark	Notes
(a)		Reason	C1	reason, eg must order numbers first
(b)		10	M1 A1	for 22 – 12 or 12 – 22 or 12 to 22 cao
(c)		16	M1 A1	for adding the numbers and dividing by 7 cao

Q7.

PAPER: IMA0_1F				
Question	Working	Answer	Mark	Notes
(a)		3	1	B1 for 3, accept – 3
(b)		1	2	M1 for evidence of adding all 7 or all 6 non zero temperatures <b>and</b> dividing by 7 A1 cao

Q8.

PAPER: IMA0_2F				
Question	Working	Answer	Mark	Notes
(a)		30	1	B1 cao
(b)		63	2	M1 for $[(4 \times 0)] + (5 \times 1) + (10 \times 2) + (7 \times 3) + (3 \times 4) + (1 \times 5)$ Or $[0] + 5 + 20 + 21 + 12 + 5$ condone one error or omission or for 67 given as total A1 cao
(c)		2.1	2	M1 for an attempt to divide the number of customers by the number of tables A1 for 2.1 or ft from (a) and (b)

Q9.

Question	Working	Answer	Mark	Notes
		$\frac{x+10+x+x-4}{3}$	3	M1 for $x + 10$ or $x - 4$ M1 for $x + 10 + x + x - 4$ A1 for $\frac{x+10+x+x-4}{3}$ oe