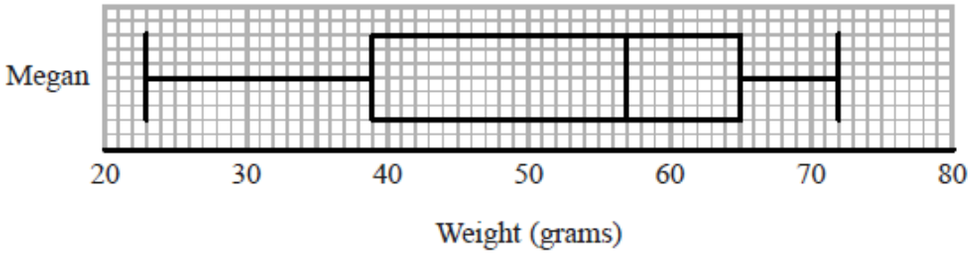
Box Plots - Stem Leaf - Sample Spaces

Questions

Q1.

Megan grows potatoes.

The box plot below shows information about the weights of Megan's potatoes.



Megan says that half of her potatoes weigh less than 50 grams each.

(a) Is Megan correct?

Give a reason for your answer.

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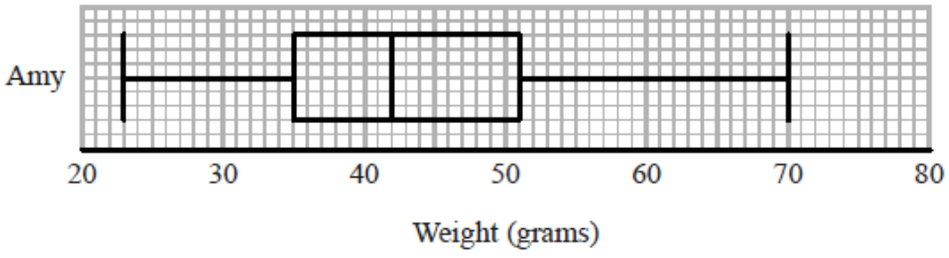
(1)

Amy also grows potatoes.

The box plot below shows information about the weights of Amy's potatoes.



(b) Compare the distribution of the weights of Megan's potatoes with the distribution of the weights of Amy's potatoes.

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(2)

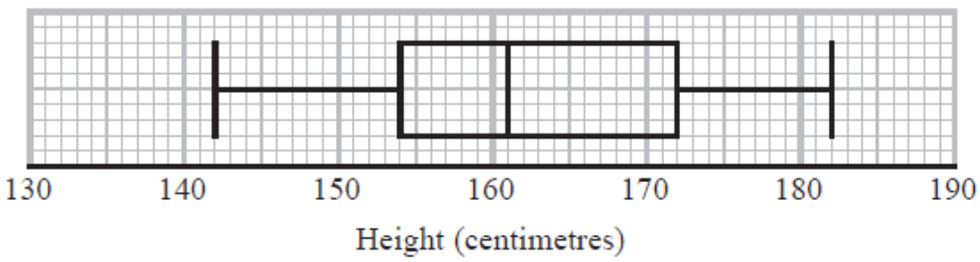
(Total for question = 3 marks)

Q2.

Aisha recorded the heights, in centimetres, of some girls.
She used her results to work out the information in this table.

Least height	142 cm
Lower quartile	154 cm
Interquartile range	17 cm
Median	162 cm
Range	40 cm

Aisha drew this box plot for the information in the table.
The box plot is **not** fully correct.



Write down the two things Aisha should do to make the box plot fully correct.

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2 .....

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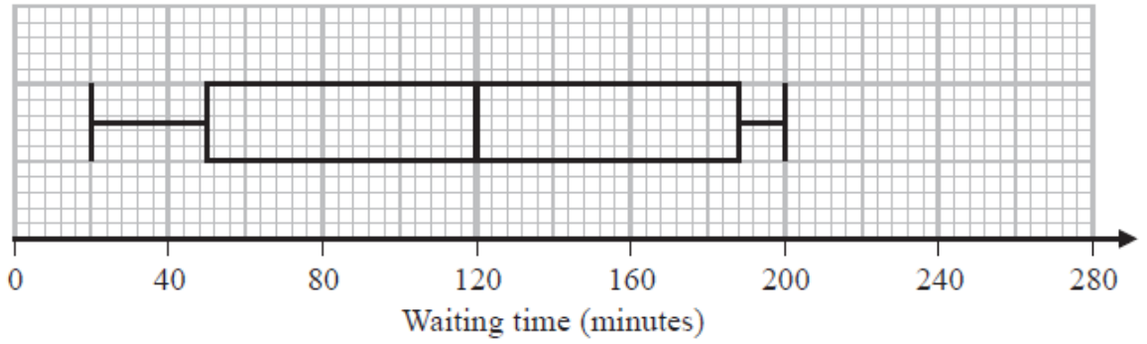
(Total for question = 2 marks)

Q3.

The box plot shows information about the length of time, in minutes, some people waited to see a doctor at a hospital on Monday.



(a) Work out the interquartile range of the information in the box plot.

..... minutes

(2)

Becky says,

"50% of the people waited for at least 2 hours."

(b) Is Becky correct?

Explain why.

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(1)

The table gives information about the length of time, in minutes, some people waited to see a doctor at the same hospital on Tuesday.

	Waiting time (minutes)
Shortest time	20
Lower quartile	50
Median	100
Upper quartile	140
Longest time	210

Becky was asked to compare the distribution of the lengths of times people waited on Monday with the distribution of the lengths of times people waited on Tuesday.

She wrote,

"People had to wait longer on Tuesday than on Monday."

(c) Give **one** reason why Becky may be wrong.

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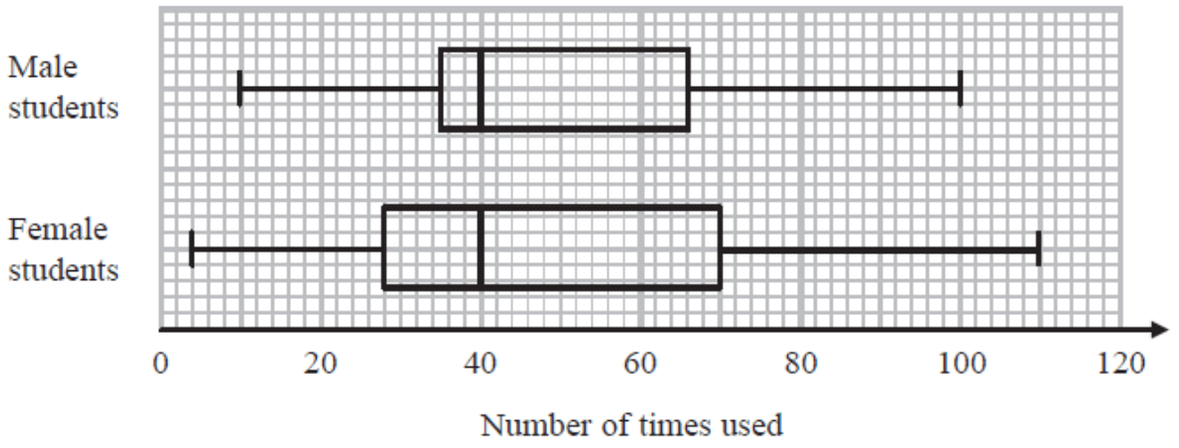
(1)

(Total for question = 4 marks)

Q4.

*Some students were asked how many times they each used their mobile phones last week.

The box plots give information about the male students' answers and about the female students' answers.



Compare the two distributions represented by the box plots.

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(Total for question = 3 marks)

Q5.

Jake and Sarah each played a computer game six times.

Their scores for each game are shown below.

Jake	10	9	8	11	12	8
Sarah	2	10	7	14	4	10

(a) Who had the most consistent scores, Jake or Sarah?

You must give a reason for your answer.

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(1)

Jake played a different game 20 times.

The stem and leaf diagram shows information about his scores.

0	9
1	2 3 3 4 5
2	5 6 6 6 6 7
3	1 3 4 6 8
4	0 2 9

Key
1 | 2 represents 12 points

Jake said his modal score was 6 points because 6 occurs most often in the diagram.

(b) Is Jake correct?

You must explain your answer.

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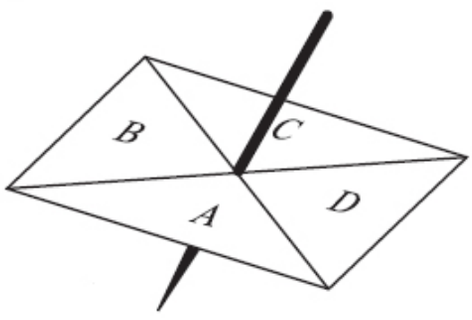
(1)

(Total for question = 2 marks)

Q6.

Sandy has a 4-sided spinner.
The sides of the spinner are labelled A, B, C and D.
The spinner is biased.

The table shows the probability that the spinner will land on A or on B or on C.



Side	A	B	C	D
Probability	0.15	0.32	0.27	

(a) Work out the probability that the spinner will land on D.

. . . . . .

(2)

Sandy spins the spinner 300 times.

(b) Work out an estimate for the number of times the spinner will land on A.

. . . . . .

(2)

(Total for Question is 4 marks)

Q7.

Here is a four-sided spinner.
The sides of the spinner are labelled A, B, C and D.

The table shows the probability that the spinner will land on A or on B or on D.

Letter	A	B	C	D
Probability	0.12	0.39		0.18

Amber spins the spinner once.

(a) Work out the probability that the spinner will land on C.

. . . . . .

(2)

Lucy is going to spin the spinner 50 times.

(b) Work out an estimate for the number of times the spinner will land on A.

. . . . . .

(2)

(Total for Question is 4 marks)

Q8.

Kerry has two fair 6-sided dice, A and B.

Kerry is going to roll both dice.

(a) Complete the sample space diagram to show all the possible outcomes.

Dice A \ Dice B	1	2	3	4	5	6
1	(1, 1)	(1, 2)	(1, 3)	(1, 4)	(1, 5)	(1, 6)
2	(2, 1)	(2, 2)	(2, 3)	(2, 4)	(2, 5)	(2, 6)
3	(3, 1)	(3, 2)	(3, 3)	(3, 4)	(3, 5)	(3, 6)
4	(4, 1)	(4, 2)	(4, 3)	.....	.....	.....
5	(5, 1)	(5, 2)	(5, 3)	.....	.....	.....
6	(6, 1)	(6, 2)	(6, 3)	.....	.....	.....

(1)

(b) Write down the probability that Kerry will get a 1 on dice A and a 1 on dice B.

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(1)

Kerry rolls dice A and dice B.

*(c) Compare the probability that Kerry will get a total of 6 with the probability that she will get a total of 7

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(1)

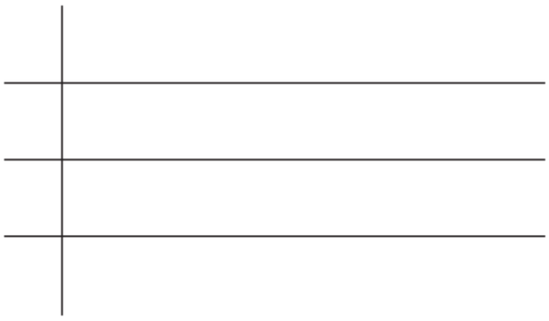
(Total for question = 3 marks)

Q9.

Chloe recorded the test marks of 20 students.

22	29	38	16	36	18	30	21	27	43
14	41	25	38	46	19	48	34	23	46

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



(3)

One of these students is going to be chosen at random.

(b) Find the probability that this student has a test mark less than 28

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(2)

(Total for question = 5 marks)

Q10.

Here are the marks 20 students got in a French test.

76	82	84	69	80	64	70	81	75	91
87	67	80	70	94	76	81	69	71	77

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

(3)

One of these students is going to be chosen at random.

The pass mark in the French test is 71

Omar writes,

The probability that this student failed the French test is $\frac{1}{4}$

Omar is wrong.

(b) Explain why.

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(2)

(Total for question = 5 marks)