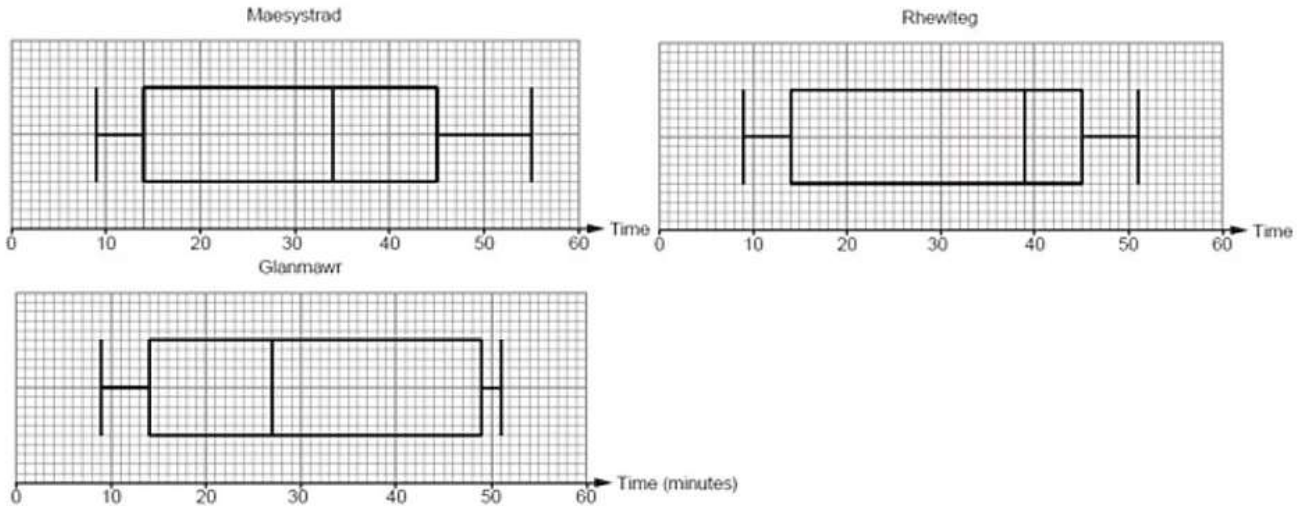


Numeracy Summer 2019 P1 Q10

- (a) Maesystrad, Rhewlteg and Glanmawr are three colleges. Each college recorded the times Year 12 students took to travel to college. The results are displayed in the box-and-whisker plots below.



- (i) Which of the three colleges has the greatest range of times?
What is the range of times for this college? [1]
- (ii) On average, in which college did Year 12 students have the longest travel times?
You must give a reason for your answer. [1]
- (iii) Which college has the greatest difference between the median and the lower quartile?
What is this difference? [1]
- (iv) Which of the three colleges has the greatest number of Year 12 students?
Give a reason for your answer. [1]

Maesystrad Rhewlteg Glanmawr Don't know

- (b) At another college, Wynne College, there are 240 students in Year 12.

The interquartile range of the times taken for these students to travel to college is 32 minutes.

- (i) How many of these students have travel times within this interquartile range? [1]
- (ii) 75% of the Year 12 students at Wynne College take less than 55 minutes to travel to college.
Complete the following statement.

'25% of the Year 12 students at Wynne College take less than minutes to travel to college.'

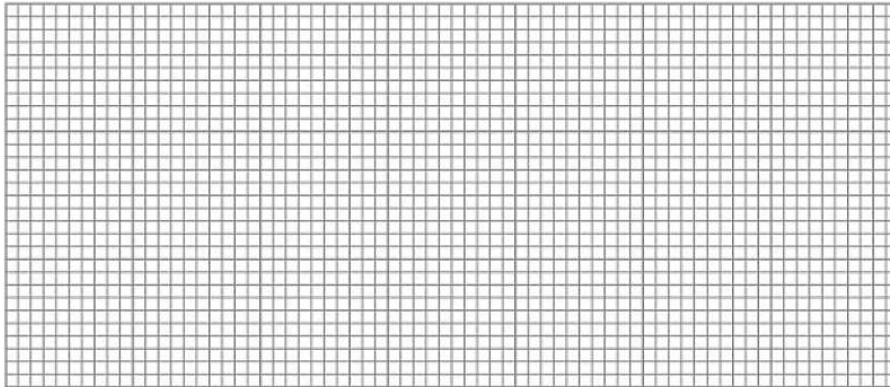
[1]

Intermediate Numeracy Nov 2018 P1 Q11

Gwen records the time she spends writing each of 240 text messages. She finds the following.

- The greatest time is 1 minute 5 seconds.
- The range of the times is 60 seconds.
- The median is 45 seconds.
- The lower quartile is 23 seconds.
- The interquartile range is 32 seconds.

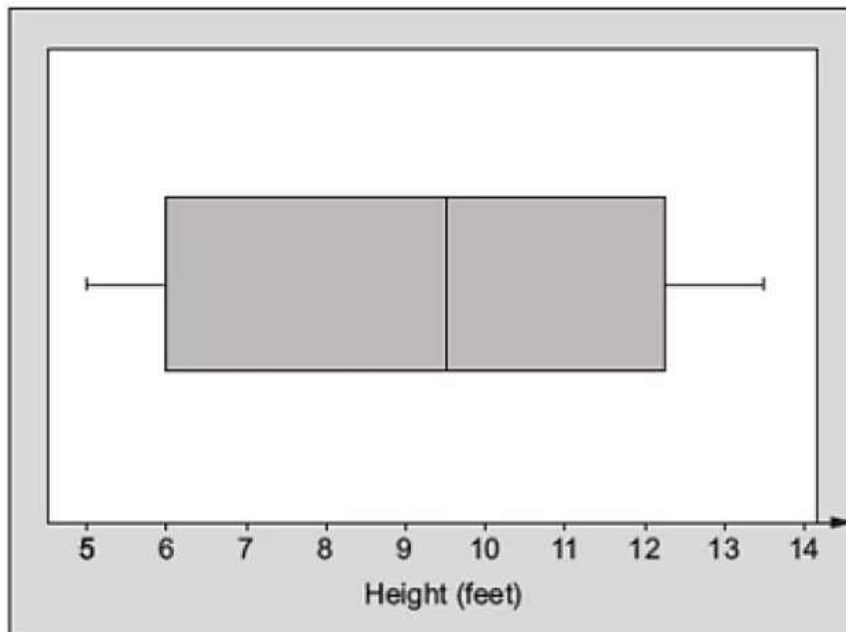
(a) Use the graph paper to draw a box-and-whisker diagram to represent Gwen's data. [5]



(b) How many of these text messages took Gwen more than 23 seconds to write? [2]

Intermediate Numeracy Sample 1 P1 Q12

The box-and-whisker plot shows information about the height, in feet, of waves measured at a beach on a particular day.



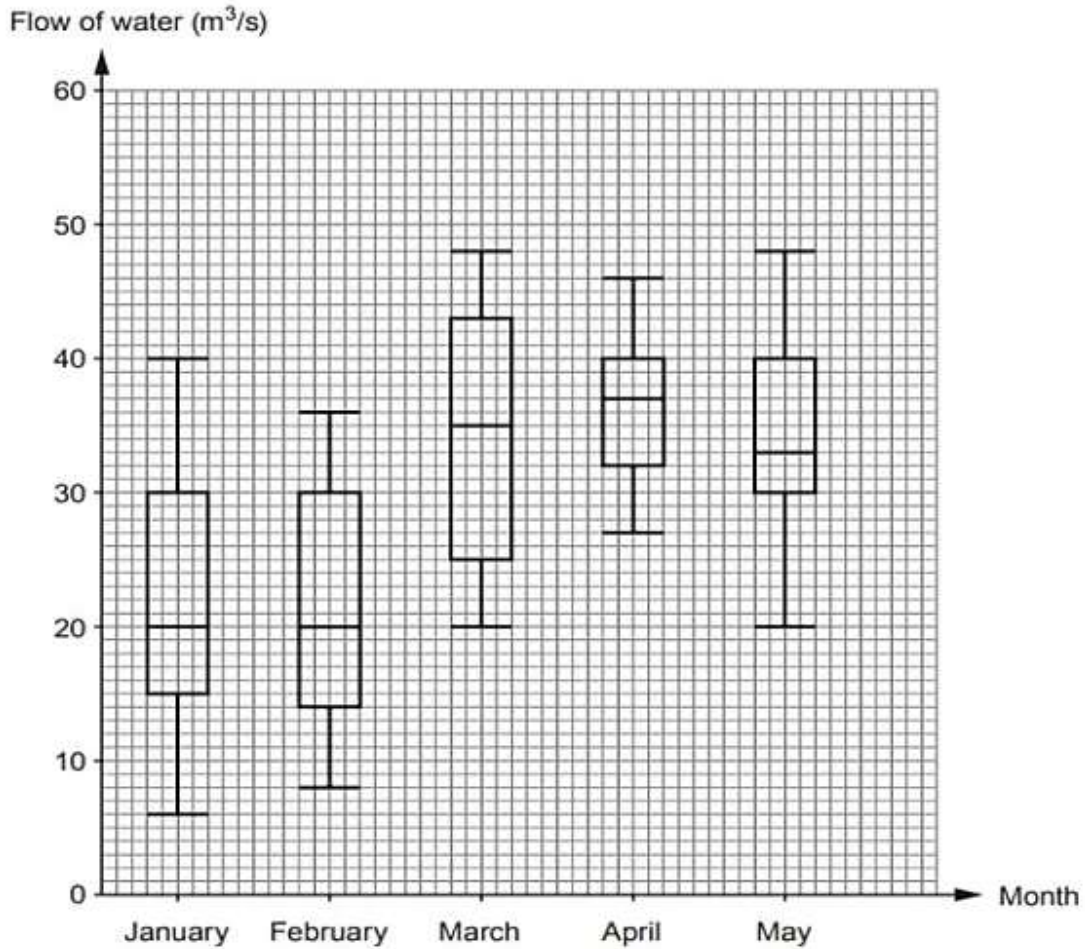
(a) About what fraction of the waves measured were less than 6 feet? [1]

(b) Circle either TRUE or FALSE for each of the following statements. [2]

The smallest wave measured was 5 feet.	TRUE	FALSE
The range of the heights of the waves measured was 6-5 feet.	TRUE	FALSE
Approximately a half of the waves measured were more than 9.5 feet.	TRUE	FALSE
Approximately a quarter of the waves measured were between 6 feet and 9.5 feet.	TRUE	FALSE
The biggest wave measured was 12.25 feet.	TRUE	FALSE

Intermediate Numeracy Summer 2017 P1 Q11

The following box and whisker plots show the flow of water through a drain, measured in m^3/s . The flow of water was measured at 11 a.m. each day for the first 5 months of the year.



- (a) In which of the five months was the median flow of water the greatest? [1]
- (b) In which of the five months was the range of the flow of water the greatest? [1]
- (c) Iona is writing some statements for a report on the flow of water through the drain. Complete each of the statements given below.
- (i) 'Both the upper quartiles and medians in the months of and were the same.' [1]
- (ii) '25% of the results in March show the flow of water was greater than m^3/s .' [1]
- (d) Circle either TRUE or FALSE for each of the following statements. [2]

25% of the results in January show the flow of water was less than $6 \text{ m}^3/\text{s}$.	TRUE	FALSE
The units, m^3/s , measure the volume of water passing through the drain each second.	TRUE	FALSE
The mean flow of water in April was certainly greater than $36 \text{ m}^3/\text{s}$.	TRUE	FALSE
The month with the greatest difference between the lower quartile and the median was May.	TRUE	FALSE

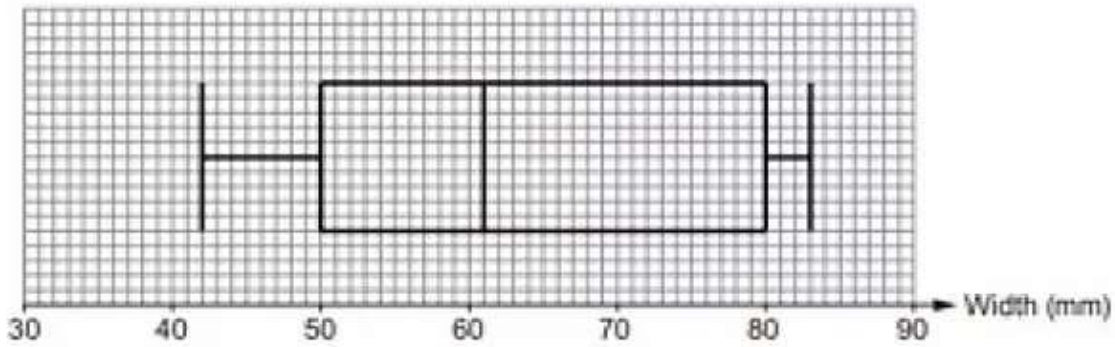
Intermediate Numeracy Nov 2017 P1 Q12

Lena has three apple trees in her garden.
 She has one Gala apple tree, one Orange Pippin tree and one Pink Lady tree.
 She picks 50 apples from each of the 3 trees.
 She records the width of each apple, as shown.

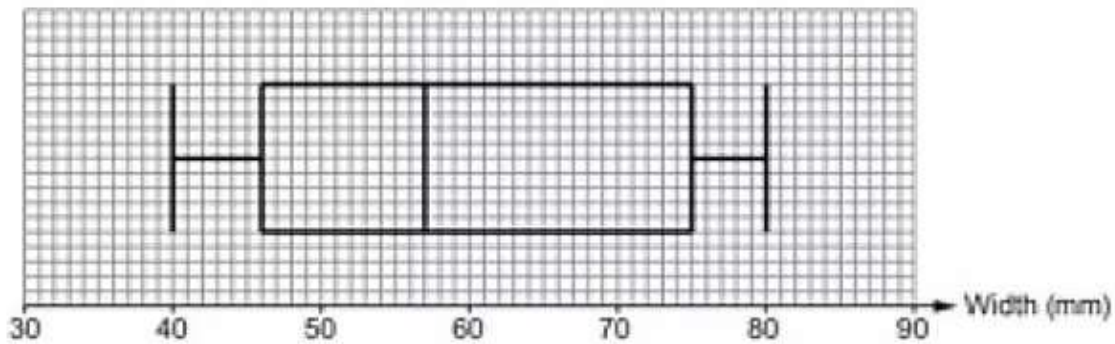


Lena constructs box and whisker diagrams for the widths of the apples collected from each of the three trees.

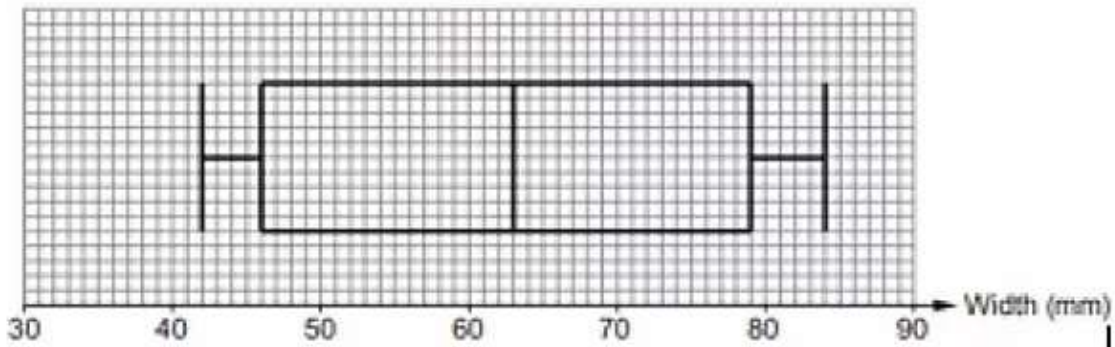
Gala apple tree



Orange Pippin apple tree



Pink Lady apple tree



(a) Complete each of the following statements.

- (i) 'Apples from the apple tree have the least median width.

The median width of apples recorded for this tree is mm.' [1]

- (ii) 'The range of the widths of apples recorded for the Gala apple tree is mm.'

[1]

- (iii) 'The apple tree has apples with the greatest interquartile range of widths.

The interquartile range of the widths of apples recorded for this tree

is mm.'

[2]

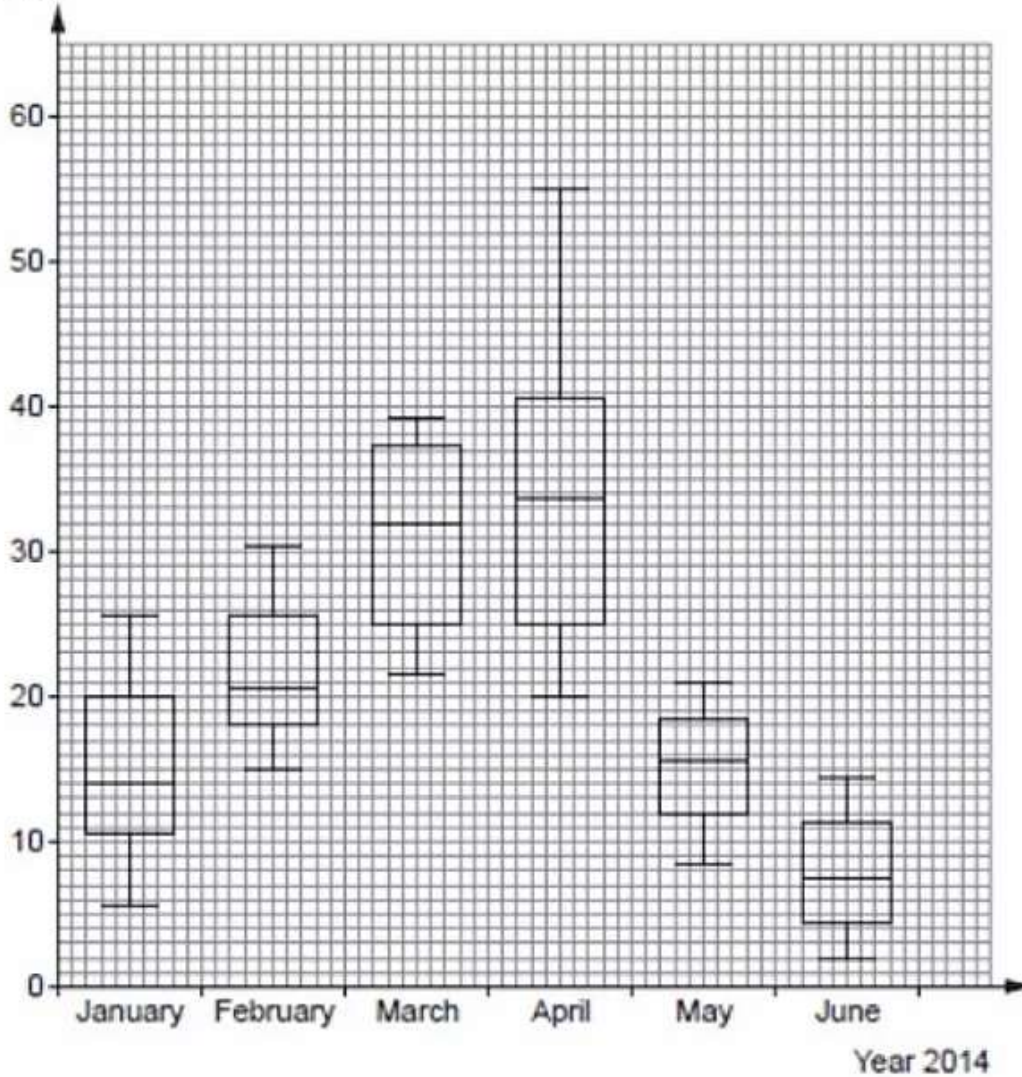
- (b) Which tree has a higher proportion of larger apples?
You must give a reason for your answer.

[1]

Intermediate Numeracy Sam 2 P1 Q13

The information shown below was found in a holiday brochure for a small island.

Rainfall, r in cm



The information shows monthly data about the rainfall in centimetres.

- (a) Looking at the rainfall, which month had the most changeable weather?
You must give a reason for your answer.

[1]

- (b) Circle either TRUE or FALSE for each of the following statements.

[2]

If you don't want much rain, the time to visit the island is in June.	TRUE	FALSE
The greatest difference in rainfall is between the months of February and March	TRUE	FALSE
The interquartile range for May is approximately equal to the interquartile range for June.	TRUE	FALSE
The range of rainfall in February was approximately 15 cm.	TRUE	FALSE
During June, there were more days with greater than 7.5 cm of rainfall than there were days with less than 7.5 cm of rainfall.	TRUE	FALSE

- (c) In July 2014, the interquartile range for the rainfall was 10 cm and the range was 40 cm.

Is it possible to say whether July has more or less rainfall than June?

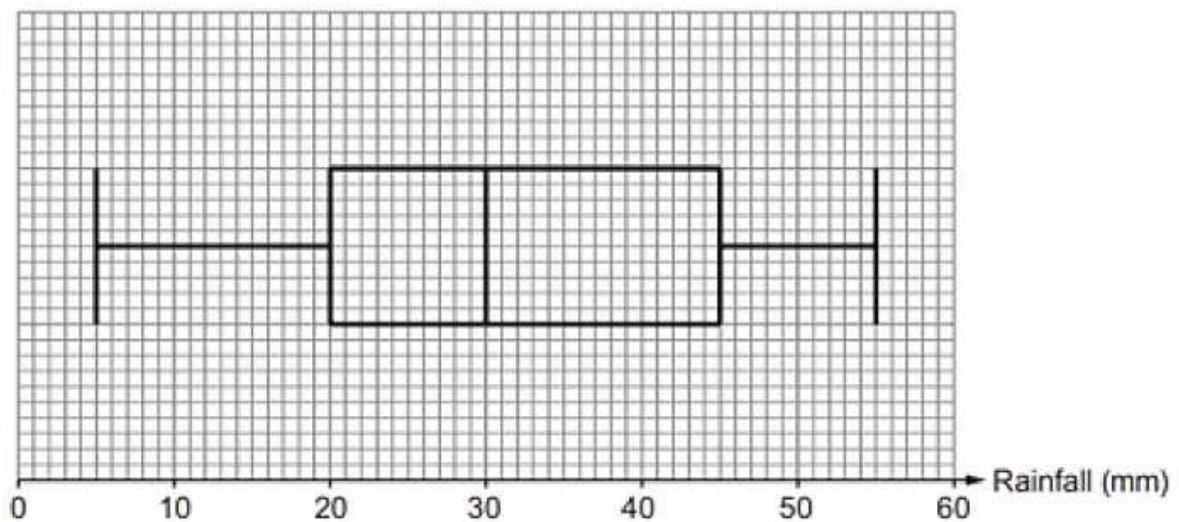
You must give a reason for your answer.

[1]

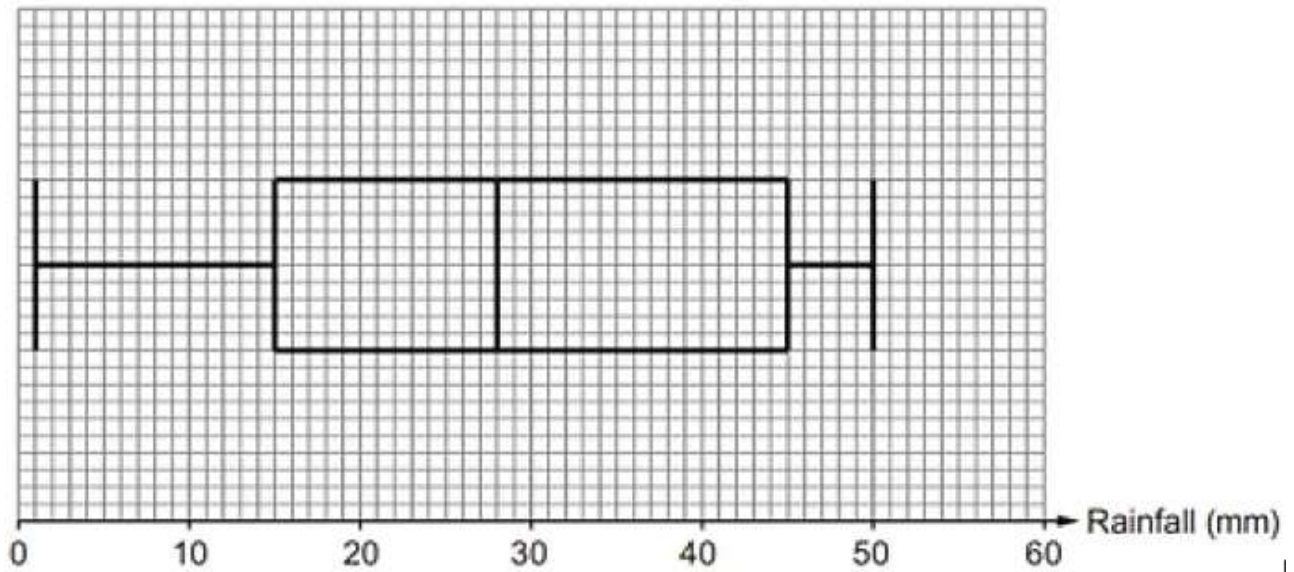
Intermediate Numeracy Nov 2016 P1 Q13

The following box-and-whisker plots illustrate the daily rainfall for April 2016 in Trefwen and in Nawrby.

April rainfall in Trefwen



April rainfall in Nawrby



(a) Complete the following table.

[4]

	Range	Median	Interquartile range
Trefwen mm mm mm
Nawrby mm mm mm

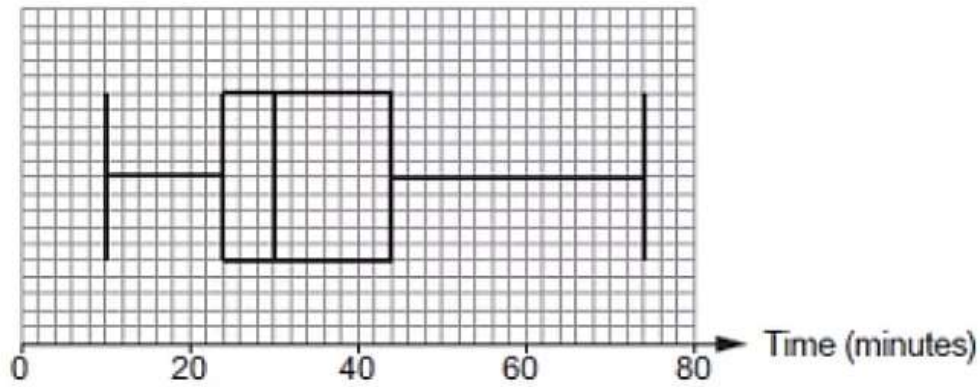
(b) Iona is going on holiday next April.
 She is hoping for good weather, with hardly any rain.
 She decides to go to Nawrby.
 Give a reason to support Iona's decision.
 Include values for both Trefwen and Nawrby.

[1]

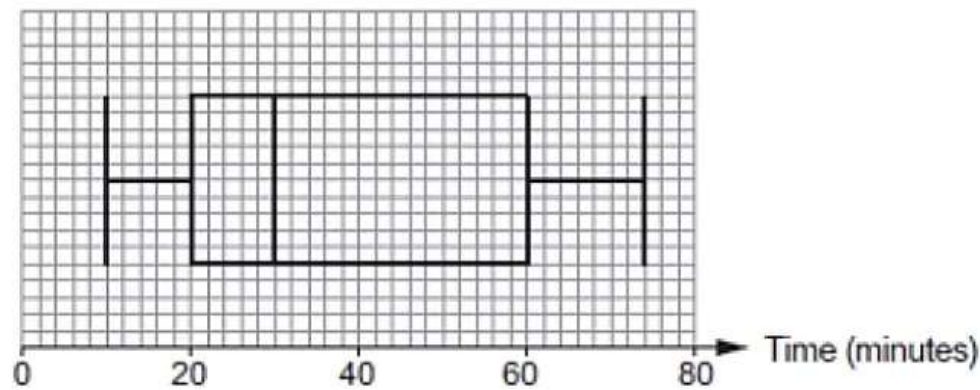
Intermediate Numeracy Summer 2018 P1 Q14

There are two entrances to a stadium, North Entrance and South Entrance.
 At each entrance, 3000 people queued to pass through security.
 The length of time each of these people spent in the queue was recorded.
 The box-and-whisker diagrams show the results.

North Entrance



South Entrance



- (a) At the **North Entrance**, how many people had to queue for more than 44 minutes?
You must show all your working. [2]

- (b) For the **South Entrance**, calculate an estimate of the number of people who had to queue there for between 40 and 60 minutes.
You must show all your working. [3]

- (c) At which entrance did the security team seem to be more effective at getting people into the stadium quickly?
You must give a reason for your answer. [1]

North Entrance

South Entrance