

Box Plots (H)

A collection of 9-1 Maths GCSE Sample and Specimen questions from AQA, OCR, Pearson-Edexcel and WJEC Eduqas.

Name:	Mel@JustMaths
Total Marks:	

1. Ben played 15 games of basketball.

Here are the points he scored in each game.

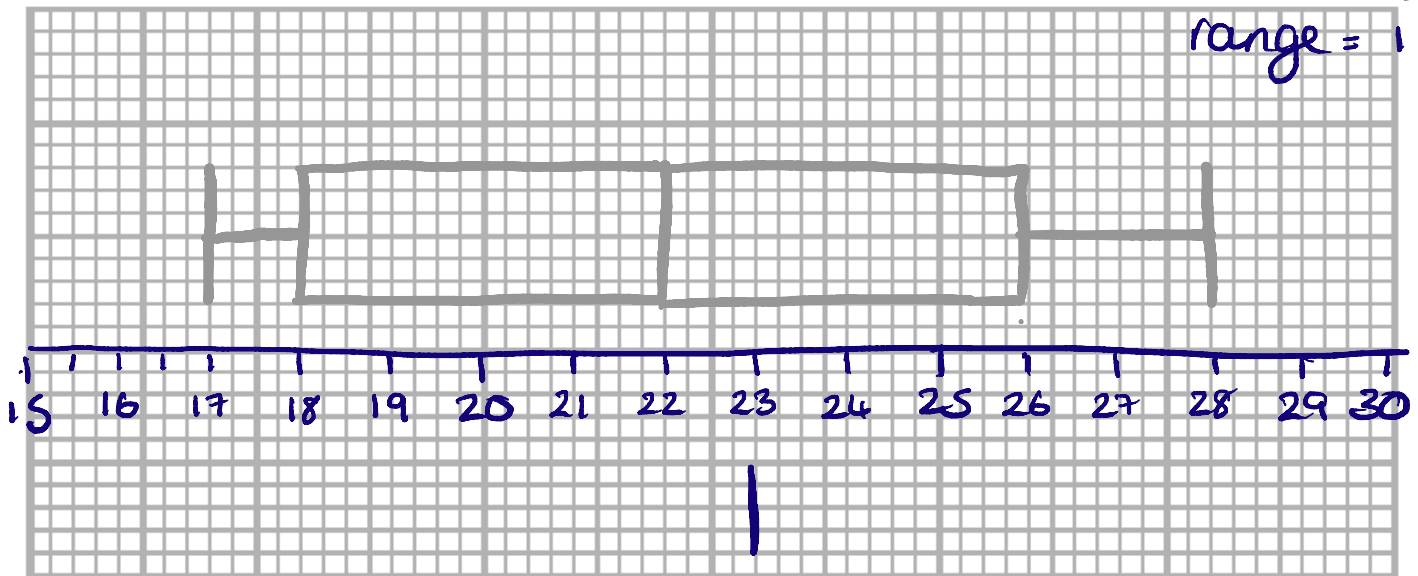
17 18 18 18 19 20 20 22 23 23 23 26 27 28 28

- (a) Draw a box plot for this information.

smallest 17 largest 28 median = 22
 $LO = 18$ $UQ = 26$

$$IQR = 26 - 18 = 8$$

$$range = 11$$



[3]

Sam plays in the same 15 games of basketball.

The median number of points Sam scored is 23

The interquartile range of these points is 12

The range of these points is 20

Ben
 22
 8
 11

- (b) Who is more consistent at scoring points, Sam or Ben?

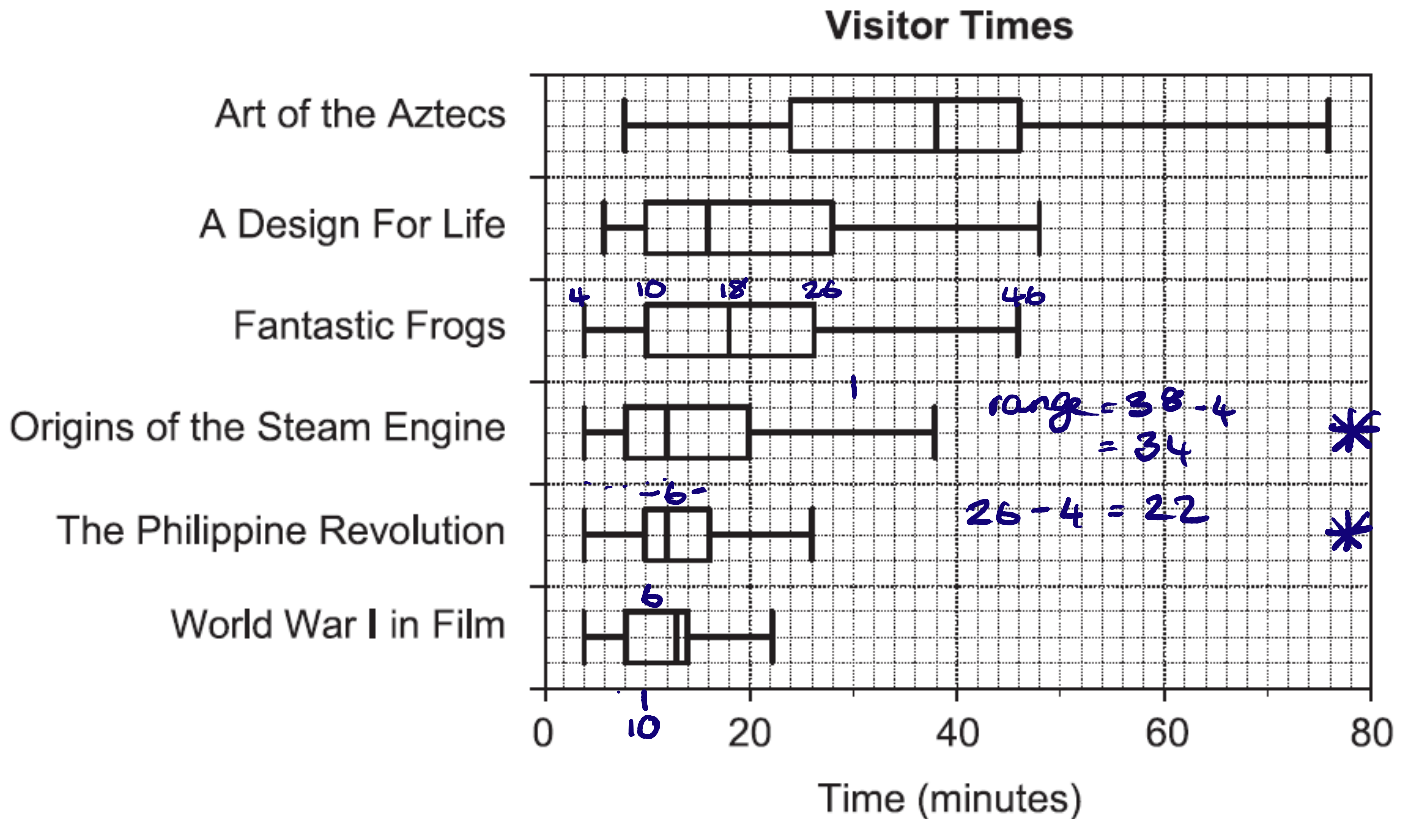
You must give a reason for your answer.

Ben is more consistent - this is shown by the smaller IQR and range.

[2]

2. One day a museum monitored the time spent by visitors at six exhibitions.

The visitor times are summarised in the box plots below.



a) Work out the range in visitor times at the Fantastic Frogs exhibition.

$$46 - 4$$

a) 42 [2]

b) At which exhibition were visitor times the most consistent?

Give a reason for your answer.

World War I in Film. It has the smallest IQR with the Philippine revolution but has a smaller range. (part!) [2]

c) Give one similarity and one difference between the distributions of the visitor times for **Origins of the Steam Engine** and **The Philippine Revolution**.

Similarity

Both have a median of 12 minutes

Difference

[2]

d) Is it possible to work out from the box plots which exhibition had the most visitors?

Justify your answer.

No. the box plots don't show frequency information.

[2]

3. In the UK in 2000

25% of the population were under 24 years old

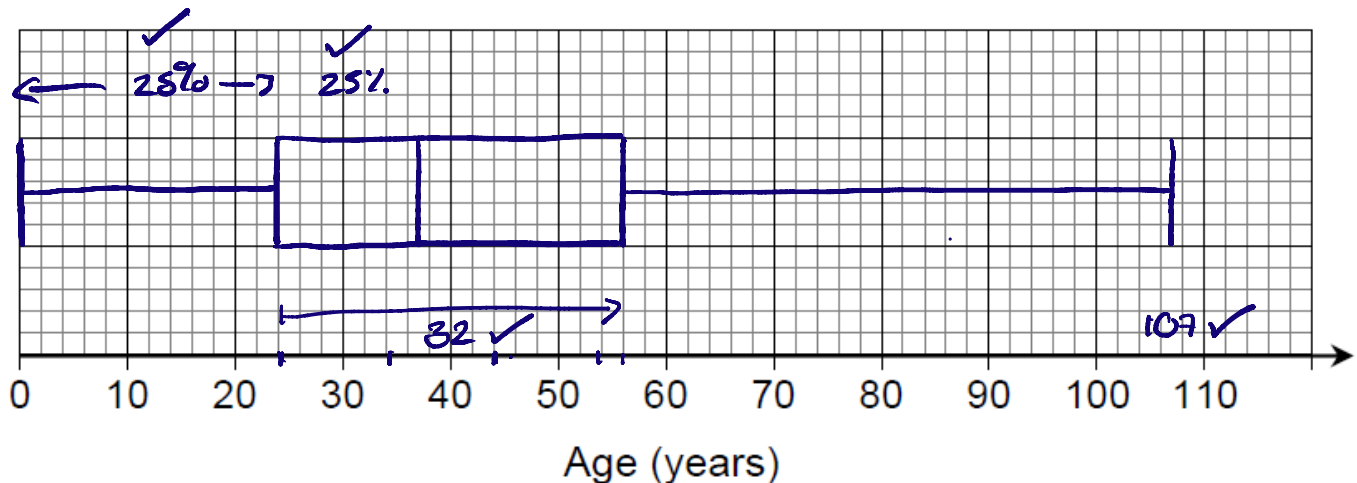
50% of the population were under 37 years old

the inter-quartile range of the ages was 32 years

the oldest person was 107 years old.

$$\begin{array}{r} 24 \\ + 32 \\ \hline 56 \end{array}$$

a) Show the information on a box plot.



[3]

b) It is predicted that in 2050 the age distribution in the UK will have

2000

32

37

56

lower quartile 26 years

median 44 years

upper quartile 66 years

$$IQR = 40.$$

Make two comments about the predicted change in the age distribution in the UK from 2000 to 2050

Comment 1 The median age will increase meaning that on 'average' they will be older in 2050.

Comment 2

The IQR in 2000 is smaller so the ages are more consistent (less spread out)

[2]

CREDITS AND NOTES

Question	Awarding Body
1	Pearson Edexcel
2	OCR
3	AQA

Notes:

These questions have been retyped from the original sample/specimen assessment materials and whilst every effort has been made to ensure there are no errors, any that do appear are mine and not the exam board's (similarly any errors I have corrected from the originals are also my corrections and not theirs!).

Please also note that the layout in terms of fonts, answer lines and space given to each question does not reflect the actual papers to save space.

These questions have been collated by me as the basis for a GCSE working party set up by the GLOW maths hub - if you want to get involved please get in touch. The objective is to provide support to fellow teachers and to give you a flavour of how different topics "could" be examined. They should not be used to form a decision as to which board to use. There is no guarantee that a topic will or won't appear in the "live" papers from a specific exam board or that examination of a topic will be as shown in these questions.



Links:

AQA <http://www.aqa.org.uk/subjects/mathematics/gcse/mathematics-8300>

OCR <http://ocr.org.uk/gcsemaths>

Pearson Edexcel <http://qualifications.pearson.com/en/qualifications/edexcel-gcses/mathematics-2015.html>

WJEC Eduqas <http://www.eduqas.co.uk/qualifications/mathematics/gcse/>

Contents:

This version contains questions from:

AQA – Sample Assessment Material, Practice set 1 and Practice set 2

OCR – Sample Assessment Material and Practice set 1

Pearson Edexcel – Sample Assessment Material, Specimen set 1 and Specimen set 2

WJEC Eduqas – Sample Assessment Material