



EXAM PAPERS PRACTICE

GCSE OCR Math J560

Box Plots

Answers

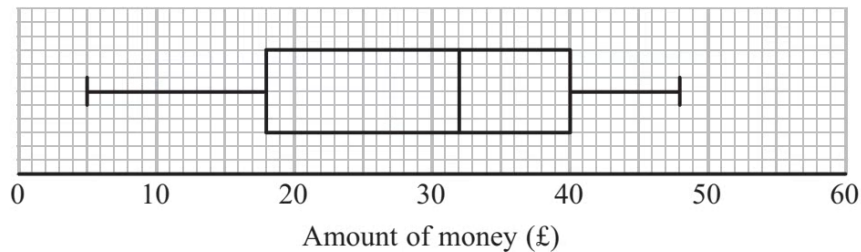
*"We will help you to
achieve A Star "*



Answer 1

Some boys also did the sponsored swim.

The box plot shows information about the amounts of money (£) the boys raised.



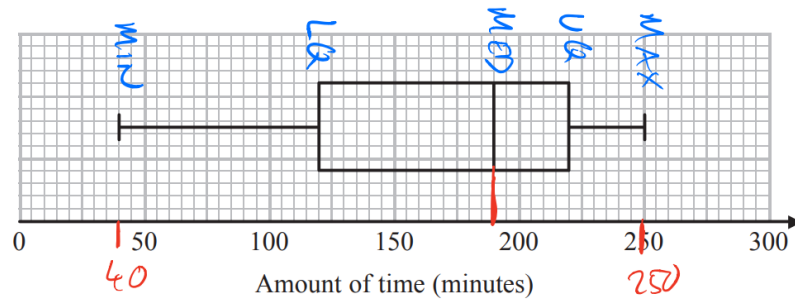
(b) Compare the amounts of money the girls raised with the amounts of money the boys raised.

- AVERAGE/MEDIAN • MEDIAN FOR GIRLS IS LESS
- SPREAD (RANGE / IQR) • IQR FOR GIRLS IS GREATER.



Answer 2

The box plot below shows information about the amount of time the boys spent doing homework last week.



*(b) Compare the amount of time the girls spent doing homework with the amount of time the boys spent doing homework.

AVERAGE/SPREAD

	BOYS	GIRLS
MED	190	170
RANGE	210	230

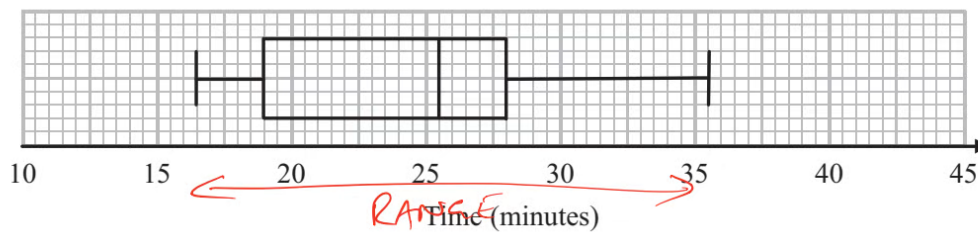
$$250 - 40 = 210$$

ON AVERAGE THE BOYS SPEND SPEND LONGER DOING HOMEWORK BUT THE GIRLS' TIMES HAVE A GREATER RANGE.



Answer 3

The box plot below shows information about the times, in minutes, some boys took to do the same jigsaw puzzle.



(b) Compare the distributions of the girls' times and the boys' times.

MEDIAN - ON AVERAGE THE GIRLS TIME WAS LONGER
SPREAD - BOYS HAD A SMALLER RANGE OF TIMES.

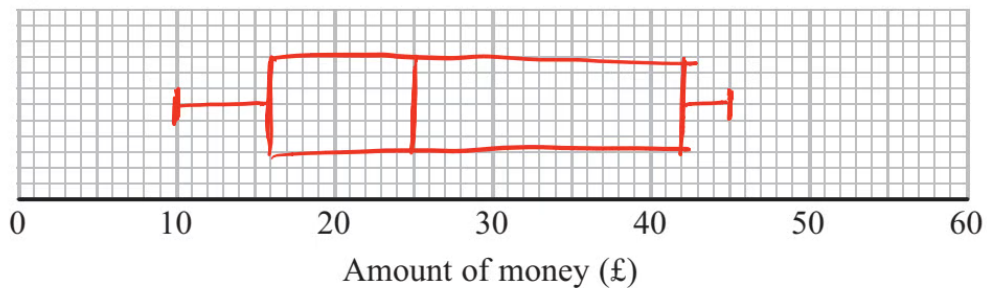
Answer 4

Some girls did a sponsored swim to raise money for charity.

The table shows information about the amounts of money (£) the girls raised.

MIN	Least amount of money (£)	10
MAX	Greatest amount of money (£)	45
	Median	25
	Lower quartile	16
	Upper quartile	42

(a) On the grid, draw a box plot for the information in the table.





Answer 5

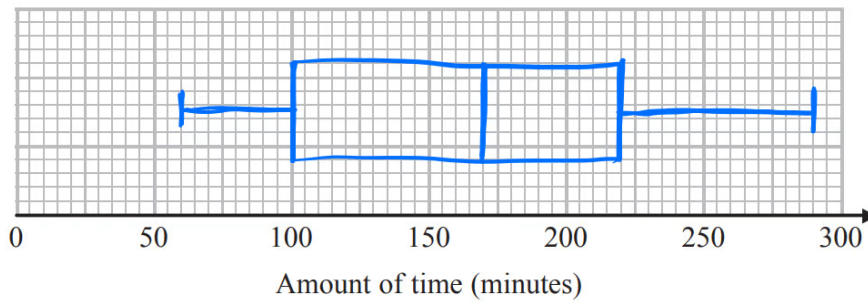
The students in a class kept a record of the amount of time, in minutes, they spent doing homework last week.

The table shows information about the amount of time the girls spent doing homework last week.

		Minutes
MIN	Least amount of time	60
	Range	230
MED	Median	170
LQ	Lower quartile	100
UQ	Upper quartile	220

MAX = 60 + 230 = 290

(a) On the grid, draw a box plot for the information in the table.





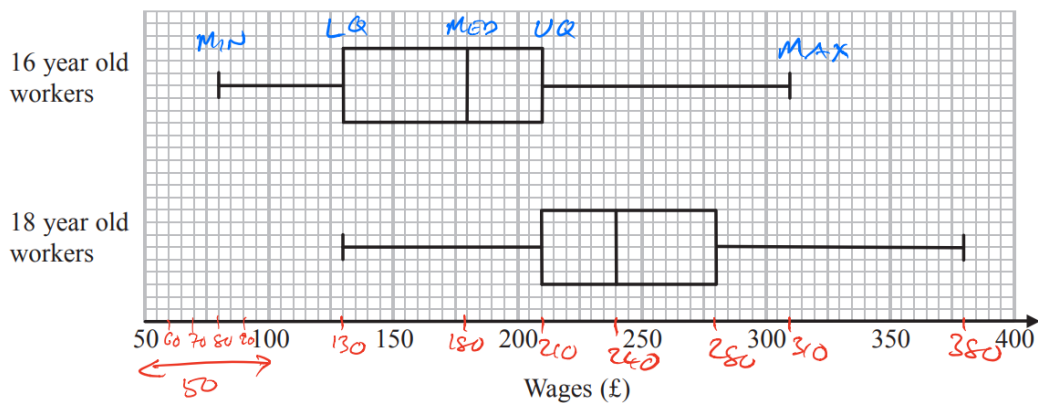
Answer 6

(b) Work out the interquartile range.

$$IQR = UQ - LQ = 71 - 35 = \underline{\underline{36}}$$

Answer 7

The box plots give information about the wages of a group of 16 year old workers and a group of 18 year old workers.



*(a) Compare the distribution of the wages of the 16 year old workers with the distribution of the wages of the 18 year old workers.

COMPARE MEDIAN AND IQR OR RANGE

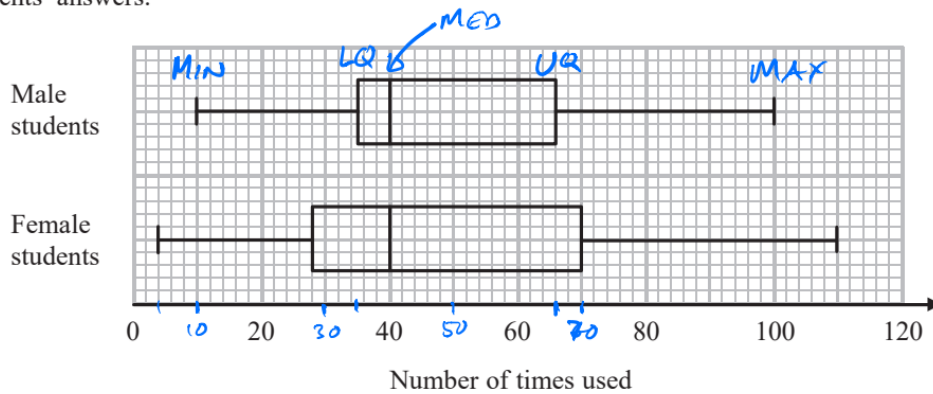
MIN	16yo 80	18yo 130	• MEDIAN WAGE IS MUCH BIGGER FOR 18YOS ($240 > 180$) • RANGE OF WAGES IS SIMILAR FOR BOTH AGES ($230 \approx 250$)
LQ	130	210	
MED	180	240	
UQ	210	280	
MAX	310	380	
RANGE:	$310 - 80$ <u><u>230</u></u>	$380 - 130$ <u><u>250</u></u>	



Answer 8

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.



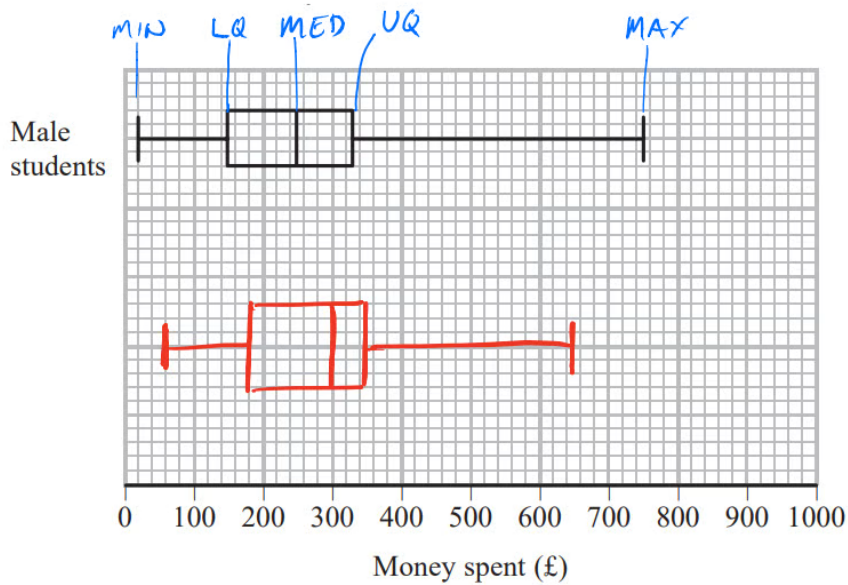
Compare the two distributions represented by the box plots.

	MALE	FEMALE
MIN	10	4
LQ	35	28
MED	40	40
UQ	66	70
MAX	100	110
RANGE = MAX - MIN	$100 - 10 = 90$	$110 - 4 = 106$

- THE MEDIAN NUMBER OF PHONES USES IS 40 FOR BOTH MALE AND FEMALE
- FEMALES HAD A GREATER RANGE (106) OF PHONE USAGES THAN MALES (90)



Answer 9



The table below shows information about the distribution of the amounts of money spent by some female students on their holidays.

	Smallest	Lower quartile	Median	Upper quartile	Largest
Money spent (£)	60	180	300	350	650

(b) On the grid above, draw a box plot for the information in the table.

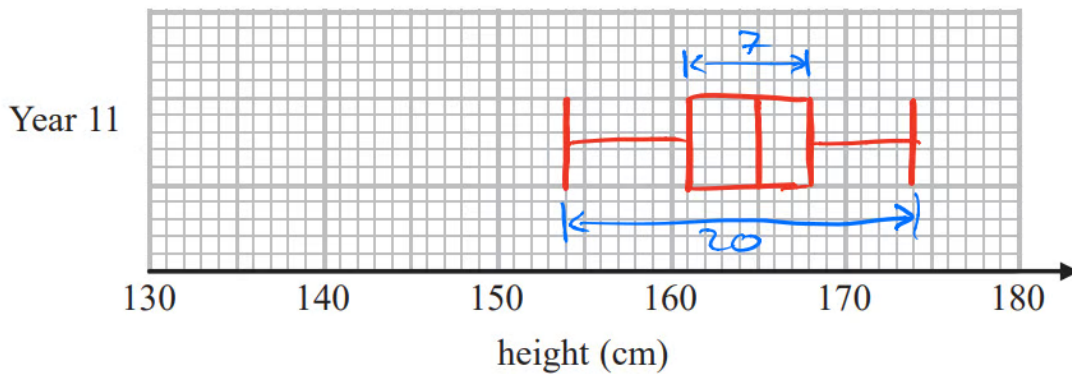


Answer 10

The table shows information about the heights, in cm, of a group of Year 11 girls.

	height (cm)
least height	154
median	165
lower quartile	161
interquartile range	7
range	20

(a) Draw a box plot for this information.



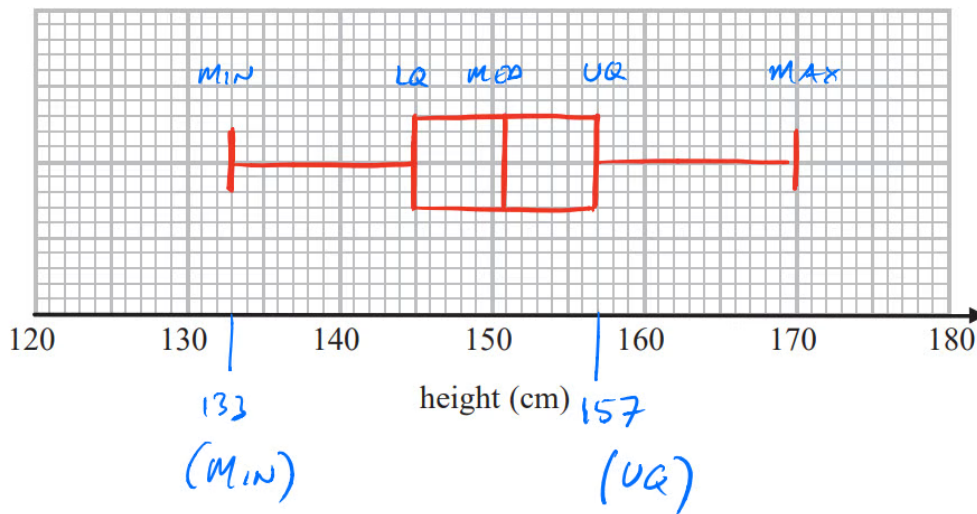


Answer 11

The table gives some information about the heights of 80 girls.

Least height	133 cm
Greatest height	170 cm
Lower quartile	145 cm
Upper quartile	157 cm
Median	151 cm

(a) Draw a box plot to represent this information.





Answer 12

(b) Work out the number of players who ran a distance of more than 5.6 km.

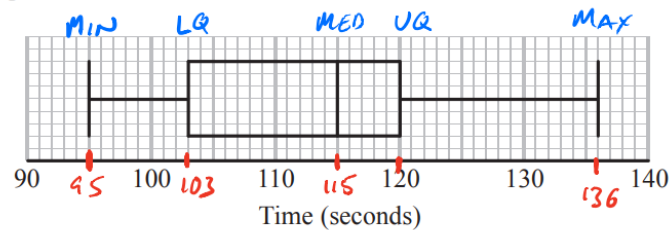
$$25\% \text{ ABOVE } UQ \Rightarrow \frac{25}{100} \times 80 = \underline{\underline{20}} \text{ PLAYERS}$$



Answer 13

Tom recorded the times, in seconds, some boys took to complete an obstacle course.

He drew this box plot for his results.



Tom also recorded the times some girls took to complete the obstacle course.

Here are the times, in seconds, for the girls. *LQ*

99	101	103	106	<i>108</i>	109	110	110	111	<i>112</i>
113	114	115	115	<i>117</i>	120	124	125	132	

UQ

Compare the distribution of the times for the boys with the distribution of the times for the girls.

AVERAGE AND SPREAD.

	BOYS	GIRLS
Min	95	99
LQ	103	108
MED	115	112
UQ	120	117
MAX	136	132
IQR	$120 - 103 = 17$	$117 - 108 = 9$

↓
UQ - LQ

AVERAGE: MEDIAN ARE SIMILAR

BOYS = 115, GIRLS = 112.

SPREAD: SPREAD OF TIMES IS GREATER FOR THE BOYS (IQR = 17) THAN THE GIRLS (IQR = 9).



Answer 14

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

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

You must give a reason for your answer.

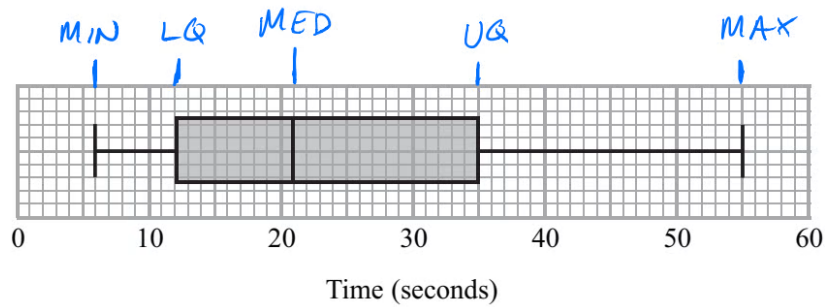
	BEN	SAM
IQR	$26 - 18$ $= 8$	12
RANGE	$28 - 17$ $= 11$	20

BEN'S IQR AND RANGE ARE BOTH SMALLER THAN SAM'S SO BEN IS MORE CONSISTENT.



Answer 15

The box plot below shows the distribution of the times that people waited to be served at Green's garden centre.



- (b) Compare the distribution of the times that people waited at Rose's garden centre and the distribution of the times that people waited at Green's garden centre.

AVERAGE: MEDIAN TIME IS GREATER AT ROSE'S

SPREAD: RANGE OF TIMES IS GREATER AT GREEN'S