Data Presentation and Interpretation

Questions on presenting and interpreting data are the perfect chance for the examiners to test you on the large data set — so now would be a good time to have another look at those massive spreadsheets...

1 A group of 10 friends play a round of minigolf and record their scores, x.
It is given that $\sum x = 500$ and $\sum x^2 = 25\,622$.

a) Find the mean and the standard deviation for the data.

mean = ..., standard deviation = ...

(3 marks)

b) Another friend wants to incorporate his score of 50. Giving reasons, but without further calculation, explain the effect of adding this score on:

(i) the mean,

.....

.....

(2 marks)

(ii) the standard deviation.

.....

.....

(2 marks)

2 The daily mean air temperature (t °C) in Jacksonville, Florida, was recorded each day in May 2015.
The results are summarised in the table below.

Daily mean air temperature (t °C)	$17.5 \leq t < 20.0$	$20.0 \leq t < 22.5$	$22.5 \leq t < 24.0$	$24.0 \leq t < 25.0$	$25.0 \leq t < 27.5$
Frequency	4	3	8	8	8

Morwenna draws a histogram to represent the data.
The bar for the $24.0 \leq t < 25.0$ class has a width of 0.5 cm and a height of 4 cm.

Find the width and height of the bar for the $25.0 \leq t < 27.5$ class.

Find the area of the bar you're given and use it to work out what 1 cm^2 represents.

width = ... cm, height = ... cm

(3 marks)

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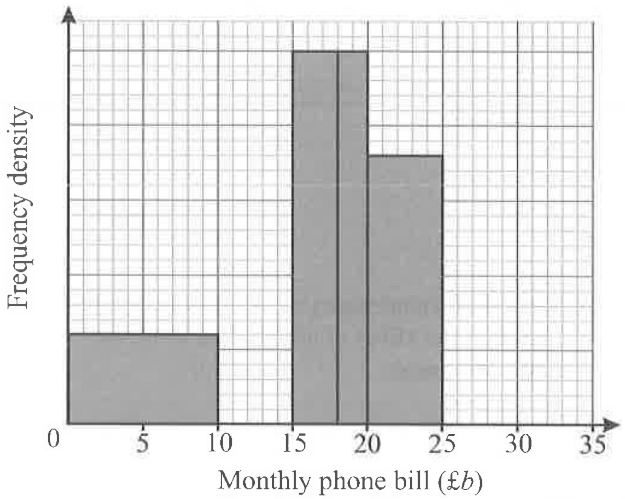
3 All the Year 12 students in a school were asked how much their monthly phone bill is (in £). The incomplete table and histogram below show the results.

a) Complete the table and the histogram.

Monthly phone bill, £b	Frequency
$0 \leq b < 10$	12
$10 \leq b < 15$	23
$15 \leq b < 18$	
$18 \leq b < 20$	
$20 \leq b < 25$	18
$25 \leq b < 35$	6



(4 marks)

b) Estimate the number of students that have a monthly phone bill of between £12.50 and £17.50.

.....

(2 marks)

c) Estimate the mean monthly phone bill for the Year 12 students.

You might find it helpful to add some columns to the table above for parts c) and d).

£ .....

(3 marks)

d) Estimate the standard deviation for the data.

£ .....

(3 marks)

e) Estimate the 20th percentile of the data.

£ .....

(3 marks)