Comparing data

Question Paper 1

Level	A Level
Exam Board	Edexcel
Subject	Mathematics
Module	Mechanics and Statistics
Topic	Representations of data
Sub-Topic	Comparing data
Booklet	Question paper 1

Time Allowed: **38 minutes**

Score: **/31**

Percentage: **/100**

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	77.5%	70%	62.5%	57.5%	45%	<45%

1. Hospital records show the number of babies born in a year. The number of babies delivered by 15 male doctors is summarised by the stem and leaf diagram below.

Babies	(4 | 5 means 45)	Totals
0		(0)
1	9	(1)
2	1 6 7 7	(4)
3	2 2 3 4 8	(5)
4	5	(1)
5	1	(1)
6	0	(1)
7		(0)
8	6 7	(2)

(a) Find the median and inter-quartile range of these data.

(3)

(b) Given that there are no outliers, draw a box plot on graph paper to represent these data. Start your scale at the origin.

(4)

(c) Calculate the mean and standard deviation of these data.

(5)

The records also contain the number of babies delivered by 10 female doctors.

34	30	20	15	6
32	26	19	11	4

The quartiles are 11, 19.5 and 30.

(d) Using the same scale as in part (*b*) and on the same graph paper draw a box plot for the data for the 10 female doctors. **(3)**

(e) Compare and contrast the box plots for the data for male and female doctors.

(2)

(Total 17 marks)

2. The number of caravans on Seaview caravan site on each night in August last year is summarised in the following stem and leaf diagram.

Caravans	0 means 10	Totals
1	0 5	(2)
2	1 2 4 8	(4)
3	0 3 3 3 4 7 8 8	(8)
4	1 1 3 5 8 8 8 9 9	(9)
5	2 3 6 6 7	(5)
6	2 3 4	(3)

(*a*) Find the three quartiles of these data. **(3)**

During the same month, the least number of caravans on Northcliffe caravan site was 31. The maximum number of caravans on this site on any night that month was 72. The three quartiles for this site were 38, 45 and 52 respectively.

(*b*) On graph paper and using the same scale, draw box plots to represent the data for both caravan sites. You may assume that there are no outliers. **(6)**

(*c*) Compare and contrast these two box plots. **(3)**

(*d*) Give an interpretation to the upper quartiles of these two distributions. **(2)**

(Total 14 marks)