STATISTICS I

KCSE 1989 – 2012 Form 2 Mathematics

1. **1990 Q2 P2**

The shoe sizes for 40 pupils in a class were recorded as shown in the table below

Shoe size	4	5	6	7	8	9
Number of pupils	1	4	18	14	2	1

Determine the mean shoe size in the class (2 marks)

2 **1991 Q6 P2**

The height in centimeters of 60 children attending a clinic were recorded as follows:

Height (cm)	No. of Children
33-35	1
36-38	3
39-41	14
42-44	15
45-47	16
48-50	8
51-53	2
54-56	1

Calculate the median height (3marks)

3 **1993 Q4 P1**

The mean age of 15 boys in a class is 19 years. On a day when one of the boys was absent, the rest gave their ages as follows:

20, 22, 16, 18, 17, 21, 18, 20, 17, 18, 19, 20, 19, 21.

Find the age of the absent boy (3marks)

4 **1995 Q3 P1**

Every week the number of absentees in a school was recorded. This was done for 39 weeks these observations were tabulated as shown below

Number of absentees	Number of weeks
0-3	6
4-7	9
8-11	8
12-15	11
16-19	3
20-23	2

Estimate the median absentee rate per week in the school (2 marks)

5 **1998 Q12 P1**

Six weeks after planting the height of bean plants were measured correct to the nearest centimeter. The frequency distribution is given in the table below.

Height (x)	Frequency	Cumulative frequency
0≤x≤4	3	
4≤x≤8	8	
8≤x≤12	19	
12≤x≤16	14	
16≤x≤16	6	

(a) Enter the cumulative frequency values in the above table

(b) Estimate the median height of the plants (3 marks)

6 **1999 Q13 P2**

The number of people who attended an agricultural show in one day was 510 men, 1080 women and some children. When the information was represented on a pie chart, the combined angle for the men and children was 2160. find the angle representing the children. (3 marks)

7 **1999 Q19 P2**

Patients who attend a clinic in one week were grouped by age as shown in the table below:

Age x years	No. of patients
0≤x≤5	14
5≤x≤15	41
15≤x≤25	59
25≤x≤45	70
45≤x≤75	15

i. Estimate the mean age

ii. On the grid provided draw a histogram to represent the distribution
1 cm to represent 5 unit on the horizontal axis
2 cm to represent 5 units on the vertical axis (8 marks)

8 **2000 Q4 P1**

The table below shows heights of 50 students

Height (cm)	Frequency
140 – 144	3
145 – 149	15
150- 154	19
155- 159	11
160-164	2

(a) State the modal class

(b) Calculate the median height (3 marks)

9 **2000 Q16 P2**

The frequency distribution table below shows the weekly salary (K£) paid to workers in a factory

Salary (Ksh)	No. of workers
50≤x≤100	13
100≤x≤150	16
150≤250	38
250≤x≤350	4
350≤x≤500	9

On the grid provided draw a histogram to respect the information shown above (3 marks)

10 **2003 Q3 P2**

The table below shows the number of goals scored by a football team in 20 matches

Goals scored	Number of matches
0	5
1	6
2	4
3	3
4	1
5	1

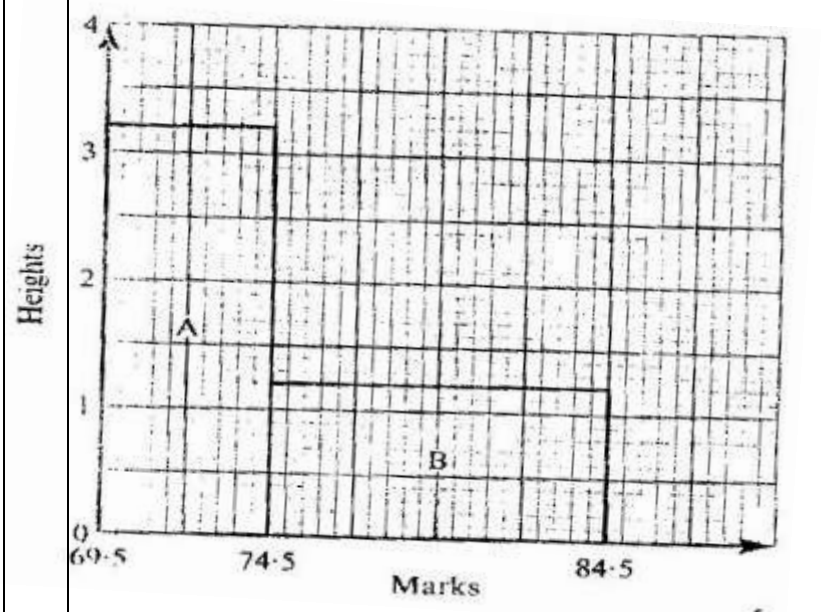
Find:

a) The mode (1mk)

b) The mean number of goals (2mks)

11 **2006 Q15 P1**

The histogram below represents the distribution of marks obtained in a test.



The bar marked A has a height of 3.2 units and a width of 5 units. The bar marked B has a height of 1.2 units and a width of 10 units

If the frequency of the class represented by bar B is 6, determine the frequency of the class represented by bar A.

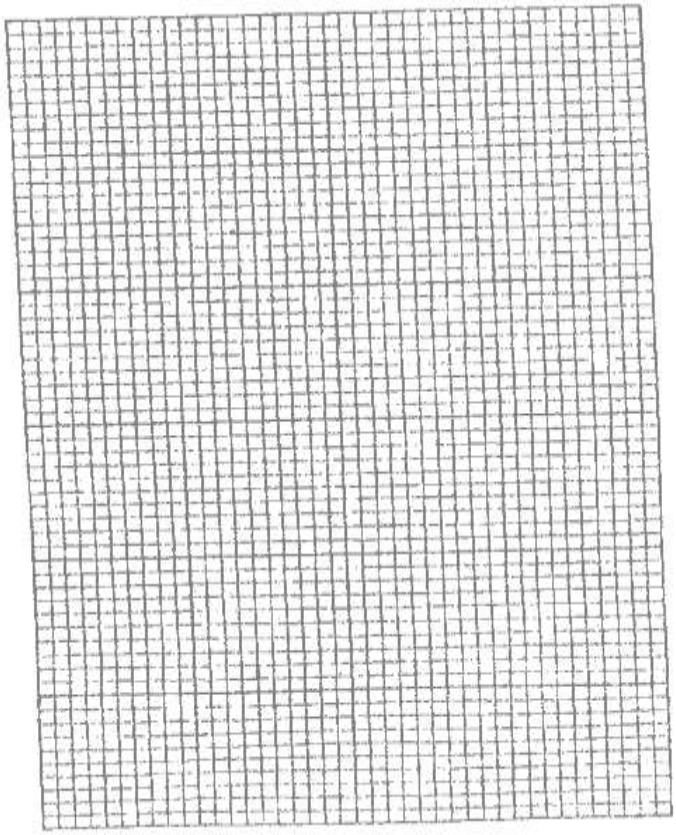
12 **2007 Q19 P1**

A frequency distribution of marks obtained by 120 candidates is to be represented in a histogram. The table below shows the grouped marks.
Frequencies for all the groups and also the area and height of the rectangle for the group 30 – 60 marks.

Marks	0-10	10-30	30-60	60-70	70-100
Frequency	12	40	36	8	24
Area of rectangle			180		
Height of rectangle			6		

(a) (i) Complete the table (4 marks)

(ii) On the grid provided below, draw the histogram (2 marks)



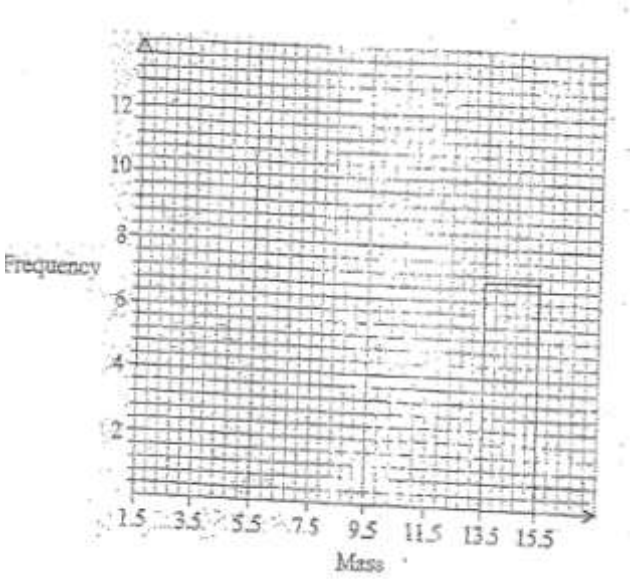
(b) (i) State the group in which the median mark lies
(1 mark)

(ii) A vertical line drawn through the median mark divides the total area of the histogram into two equal parts
Using this information or otherwise, estimate the median mark (3mks)

13 **2009 Q16 P1**
The following data was obtained for the masses of certain animals.

Mass (x kg)	Frequency
$1.5 \leq x < 5.5$	16
$5.5 \leq x < 7.5$	20
$7.5 \leq x < 13.5$	18
$13.5 \leq x < 15.5$	14

Complete the histogram on the grid provided below:



(3mks)

14 **2009 Q18 P1**

The marks scored by a group of pupils in a mathematics test were as recorded in the table below.

Marks	Frequency
0-9	1
10-19	2
20-29	4
30-39	7
40-49	10
50-59	16
60-69	20
70-79	6
80-89	3
90-99	1

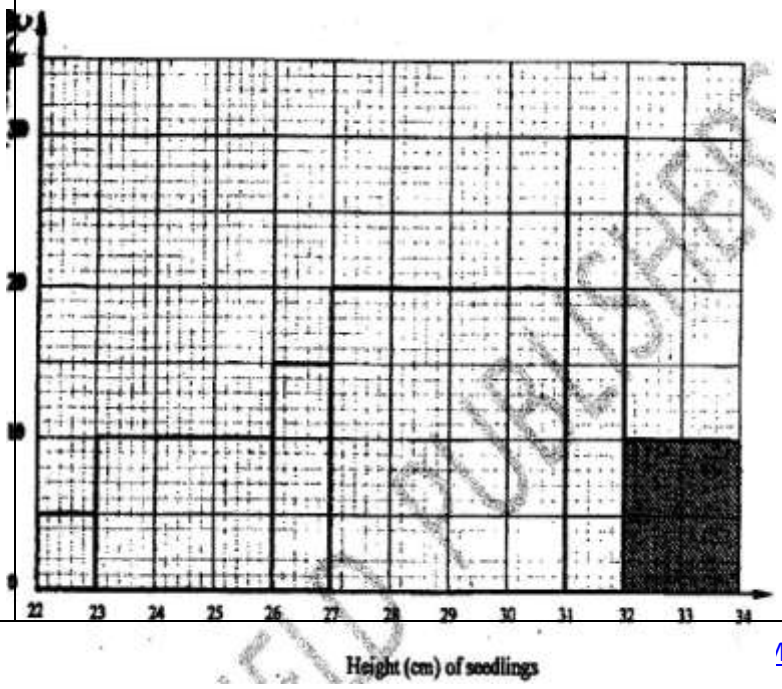
(a) (i) State the modal class

(ii) Determine the class in which the median mark lies

(b) Using an assumed mean of 54,4 calculate the mean mark. (10 mks)

15 **2010 Q16 P1**

The histogram below represents the distribution of heights a of seedlings of a certain plant.



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The shaded area in the histogram represents 20 seedlings. Calculate the percentage number of seedlings with heights of at least 23 cm but less than 27 cm. (3 mks)

16 **2010 Q23 P1**

The frequency distribution table below represents the number of kilograms of meat sold in a butchery.

Mass in kg	Frequency
1-5	2
6-`10	3
11-15	6
16-20	8
21-25	3
26-30	2
31-35	1

(a) State the modal frequency (1mk)

(b) Calculate the mean mass. (5 mks)

17 **2011 Q10 P1**

The masses of people during a clinic session were recorded as shown in the table below.

Mass (kg)	No of people
40-44	1
45-49	2
50-54	12
55-59	10
60-64	2
65-69	2
70-74	1

Calculate the mean mass. (3marks)

18 **2012 Q17 P1**

The table below shows the height, measured to the nearest cm, of 101 pawpaw trees.

Height in cm	Frequency
20-24	2
25-29	15
30-34	18
35-39	25
40-44	30
45-49	6
50-54	3
55-59	2

	(a) State the modal class. (1mark) (b) Calculate to 2 decimal places: (i) The mean height; (4marks) (ii) The differences between the median height and the mean height (5marks)