

MATHS FORM 4; STATISTICS

KCSE QUICK REVISION

*Compilation of Possible Questions in Mathematics Likely to be examined in
KCSE.*

*A Special Analysis of Prediction Questions that may be Tested in KCSE from this
Topic in Form 4.*

MATHEMATICS

SERIES 1

For Marking Schemes

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MWALIMU CONSULTANCY

STATISTICS

1. 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	0-3	4 -7	8 -11	12 - 15	16 - 19	20 - 23
(Number of weeks)	6	9	8	11	3	2

Estimate the median absentee rate per week in the school

2. The table below shows high altitude wind speeds recorded at a weather station in a period of 100 days.

Wind speed (knots)	0 - 19	20 - 39	40 - 59	60- 79	80- 99	100- 119	120- 139	140- 159	160- 179
Frequency (days)	9	19	22	18	13	11	5	2	1

- (a) On the grid provided draw a cumulative frequency graph for the data
- (b) Use the graph to estimate
- (i) The interquartile range
- (ii) The number of days when the wind speed exceeded 125 knots

3. Five pupils A, B, C, D and E obtained the marks 53, 41, 60, 80 and 56 respectively. The table below shows part of the work to find the standard deviation.

Pupil	Mark x	$x - a$	$(x-a)^2$
A	53	-5	
B	41	-17	
C	60	2	
D	80	22	
E	56	-2	

- (a) Complete the table
- (b) Find the standard deviation

4. In an agricultural research centre, the length of a sample of 50 maize cobs were measured and recorded as shown in the frequency distribution table below.

Length in cm	Number of cobs
8 – 10	4
11 – 13	7
14 – 16	11
17 – 19	15
20 – 22	8
23 – 25	5

Calculate

- (a) The mean
- (b) (i) The variance
- (ii) The standard deviation

5. The table below shows the frequency distribution of masses of 50 new- born calves in a ranch

Mass (kg)	Frequency
15 – 18	2
19- 22	3
23 – 26	10
27 – 30	14
31 – 34	13
35 – 38	6
39 – 42	2

- (a) On the grid provided draw a cumulative frequency graph for the data
- (b) Use the graph to estimate
 - (i) The median mass
 - (ii) The probability that a calf picked at random has a mass lying between 25 kg and 28 kg.

6. The table below shows the weight and price of three commodities in a given period

Commodity	Weight	Price Relatives
X	3	125
Y	4	164
Z	2	140

Calculate the retail index for the group of commodities.

7. 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 women was 216° . Find the angle representing the children.

8. The mass of 40 babies in a certain clinic were recorded as follows:

<u>Mass in Kg</u>	<u>No. of babies.</u>
1.0 – 1.9	6
2.0 – 2.9	14
3.0 -3.9	10
4.0 – 4.9	7
5.0 – 5.9	2
6.0 – 6.9	1

Calculate

(a) The inter – quartile range of the data.

(b) The standard deviation of the data using 3.45 as the assumed mean.

9. The data below shows the masses in grams of 50 potatoes

Mass (g)	25- 34	35-44	45 - 54	55- 64	65 - 74	75-84	85-94
No of potatoes	3	6	16	12	8	4	1

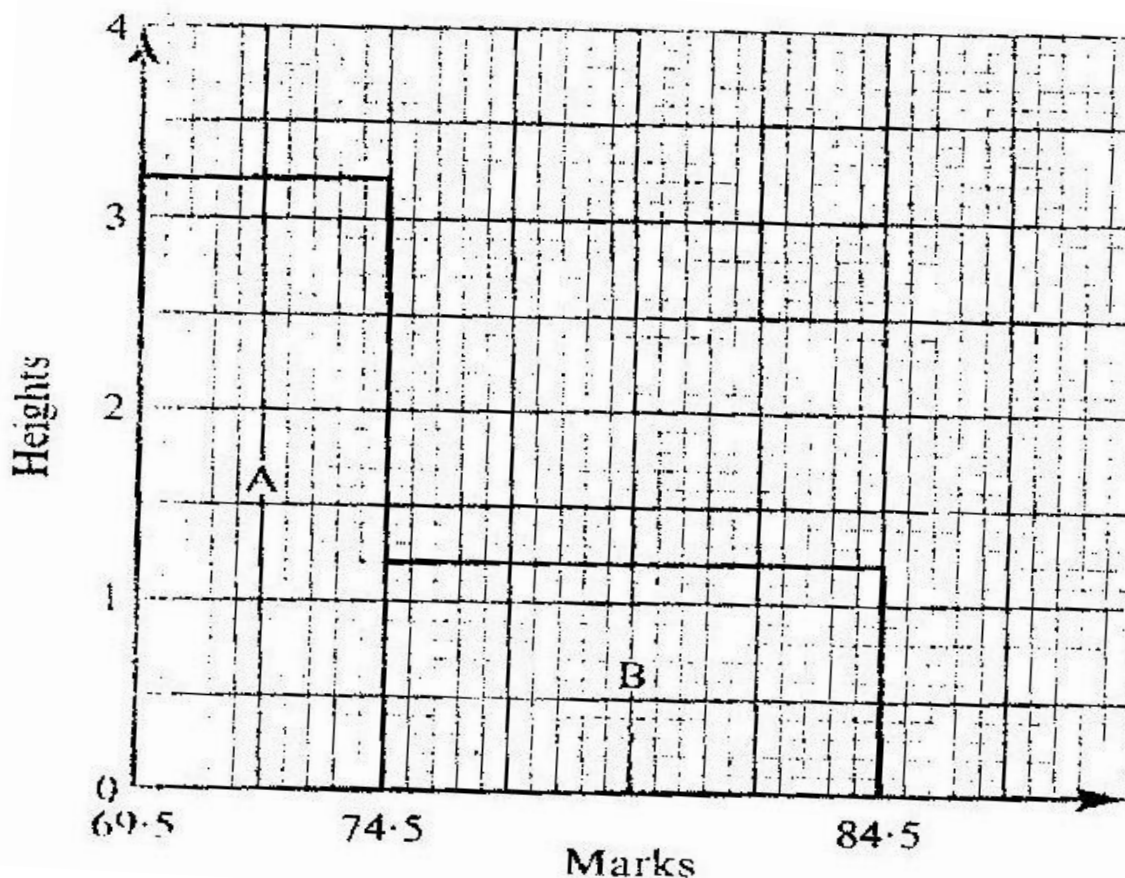
(a) On the grid provide, draw a cumulative frequency curve for the data

(b) Use the graph in (a) above to determine

(i) The 60th percentile mass

(ii) The percentage of potatoes whose masses lie in the range 53g to 68g

10. 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.

11. 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
(ii) On the grid provided below, draw the histogram
- (b) (i) State the group in which the median mark lies
(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

12. In an agriculture research centre, the lengths of a sample of 50 maize cobs were measured and recorded as shown in the frequency distribution table below

Length in cm	Number of cobs
8 – 10	4
11- 13	7
14 – 16	11
17- 19	15
20 – 22	8
23- 25	5

Calculate

- (a) The mean
(b) (i) The variance
(ii) The standard deviation

11. The table below shows the frequency distribution of masses of 50 newborn calves in a ranch.

Mass (kg)	Frequency
15 – 18	2
19- 22	3
23 – 26	10
27 – 30	14
31- 34	13
35 – 38	6
39 - 42	2

- (a) On the grid provided draw a cumulative frequency graph for the data
(b) Use the graph to estimate

- (i) The median mass
(ii) The probability that a calf picked at random has a mass lying between 25 kg and 28 kg

14. The table shows the number of bags of sugar per week and their moving averages

Number of bags per week	340	330	x	343	350	345
Moving averages		331	332	y	346	

- (a) Find the order of the moving average
(b) Find the value of X and Y axis

For Marking Schemes/Answers

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