

# STATISTICAL METHODS

1. 1992 Q 1a.

The table below shows the 1979 population for Central Province of Kenya per district.

District	Population
Kiambu	686,290
Kirinyaga	291,431
Murang'a	648,333
Nyandarua	233,302
Nyeri	486,477

a) i) Besides bar graphs, name other methods that can be used to represent the above data.

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ii) Draw a simple bar graph to represent the above data. Use the scale 1 cm represents 100,000 persons.

iii) Give four advantages of using bar graphs to represent statistical data.

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**2. 1993 Q 1a.**

The table below shows some of Kenyans imports and exports in 1987. Use it to answer questions (a) and (b)

Imports	Exports in tonnes		
Item	Weight	Item	Weight
Sugar	99,000	Coffee	316,000
Iron & Steel	300,000	Tea	159,000
Fertilizer	84,000	Maize	259,000
Coal	105,000	Soda ash	150,000
Wheat	125,000	Cement	225,000
Total	713,000	Total	1,109,000

a) i) Using a radius of 4cm, draw a pie chart to represent the data on imports shown by the table above.

ii) State three advantages of using pie charts to represent statistical data.

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**3. 1996 Q 1a (Section B)**

The table below shows the number of passengers that used railway transport in the selected countries in 1966 and 1977. Use it to answer question (a) and (b)

COUNTRY	PASSENGERS IN MILLIONS	
	1966	1977
Canada	4,200	3,000
U.S.A	27,700	16,600
Argentina	14,100	12,000
India	96,800	163,800
Japan	258,400	311,900

a) i) Using a scale of 1cm to represent 20,000 million passengers , draw comparative bar graphs based on the data above (9 marks)

ii) State two advantages of using bar graphs in presenting data

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4. 1998 Q 9a

World wheat production by regions

Region	% of wheat produce
Asia	35
Europe	22
North America	19
USSR	16
Others	8

(a) Draw a pie chart to illustrate the information given above.

(5 marks)

5. 1999 Q 6a, b

The table below shows total number of livestock in Kenya in 1986

Type of livestock	Number in millions
Cattle ( excluding dairy cattle)	7.0
Dairy cattle	2.0
Sheep	7.0
Goats	8.5
Pigs	0.1
Chicken	20.0
Total	44.6

*Source: Central Bureau of Statistics*

(a) Using a radius of 5cm, draw a pie chart to represent the information given in the table above

(b) Explain why the population of sheep is higher than that of dairy cattle

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**6. 1999 Q 9b**

The table below shows tea production in Kenya for two years

Years	Tea produced ( in tonnes)
1975	56,000
1985	137,000

- (i) Calculate the percentage increase in tea production over the ten years period between 1975 and 1985

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- (ii) Give two reasons why there was such an increase in tea production over the given period

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**7. 2000 Q 6b, d**

Country A		Country B	
Exports	Weights in Tonnes	Exports	Weight in Tonnes
Maize	12,600	Lubricating oil	2,200
Coffee	9,990	Industrial chemical	2,100
Oil cakes	1,560	Fertilizer	5,300
Spices	750	Vehicles	3,300
-----		Wire products	2,200
-----		Paper	2,700
Total	24,900	Total	17,800

- (b) (i) Draw a divide rectangle 15cm long to represent the export items for country A

- (ii) State three advantages of using divided rectangles to represent geographical data.

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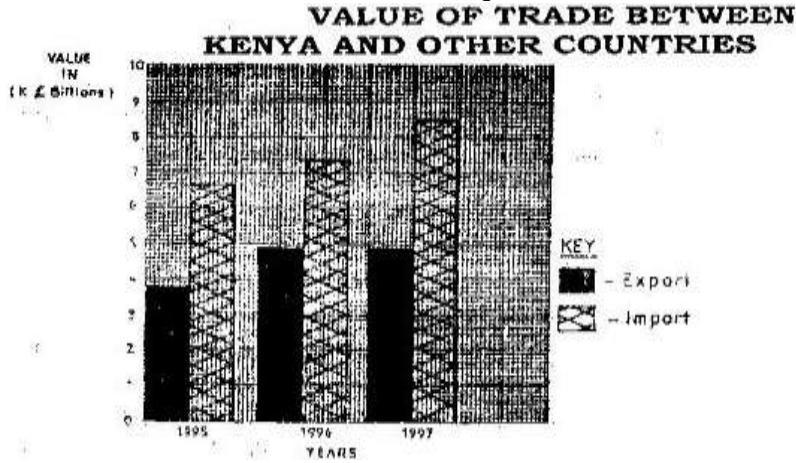
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- (d) State five characteristics of bar graph

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**8. 2001 Q 1a**

The bar graphs show the value of trade between Kenya and other countries for the year 1995, 1996 and 1997. Use it to answer question (a)



**Scale 1cm rep 1 billion K**

**SOURCE OF DATA: STATISTICAL ABSTRACT ( K ) 1998**

- a) (i) Name the type of bar shown above

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- (ii) Calculate the cumulative differences in value between Kenya and other countries

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9. 2003 Q 6a

The table below shows the value of Kenyans imports and exports in 1999.  
Use it to answer questions (a)

IMPORTS		EXPORTS	
ITEM	VALUE IN K\$ '000'	ITEM	VALUE IN K\$ '000'
Food & Beverages	760,000	Food, beverage and tobacco	3270000
Industrial supplies(Non food)	3400000	Basic materials minerals fuels and lubricants	1100000
Fuel and Lubricants	2000000	Manufactured goods	1400000
Machinery and other capital requirement	1700000	Miscellaneous	30000
Transport equipment	1500000		
Miscellaneous	960,000		
Total	10,320,000	Total	5800000

- a) Use a radius of 5 cm, draw a pie chart to represent data on exports shown on the table above. Show your calculations.

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**10. 2004 Q 6a, b**

The table below shows four principal crops produced in Kenya in the years 2000 and 2001. Use it to answer question (a) and (b).

CROP	AMOUNT IN		METRIC TONS
	2000	2001	
Wheat	70,000	130,000	
Maize	200,000	370,000	
Coffee	98,000	55,000	
Tea	240,000	295,000	

Source: Central Bureau of statistics

a)(i) Using a scale of 1 cm to represent 50,000 metric tons, draw a simple comparative bar graph based on the data above. (8 marks)

(ii) State two advantages of using comparative bar graphs (2 marks)

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b) Calculate the percentage increase in wheat production between the years 2000 and 2001. (2 marks)

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**11. 2005 Q 6a, b(i)**

The table below shows the approximation of four districts in central province in 1999.

Use it to answer question (a)

**POPULATION FOR DISTRICTS IN CENTRAL PROVINCE**

DISTRICT	POPULATION
Murang'a	350,000
Maragua	390,000
Nyandarua	470,000
Thika	650,000
<b>Total</b>	<b>1,860,000</b>

(a) (i) Suggest two possible reasons why the population of Thika is higher than that of Murang'a (2 marks)

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(ii) Using a radius of 5 cm, draw a pie chart to represent the data above (9 marks)

(iii) A part from pie charts, name two other statistical methods that can be used to represent the data in the table. (2 marks)

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b) i) Give three advantages of using a pie chart to represent data (3 marks)

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**12. 2006 Q 3**

The table below represents information on population change in Kenya by province between years 2000 and 2005

Province	Population in Millions	
	Years	
	2000	2005
Nairobi	2.229	2.751
Central	3.882	4.038
Coast	2.662	2.927
Eastern	4.840	5.120
North- Eastern	1.054	1.438
Nyanza	4.598	4.916
Rift valley	7.386	8.366
Western	5.532	3.885
<b>Total</b>	<b>30.183</b>	<b>33.441</b>

(a) Which province had the highest change in population between 2000 and 2005? (2 marks)

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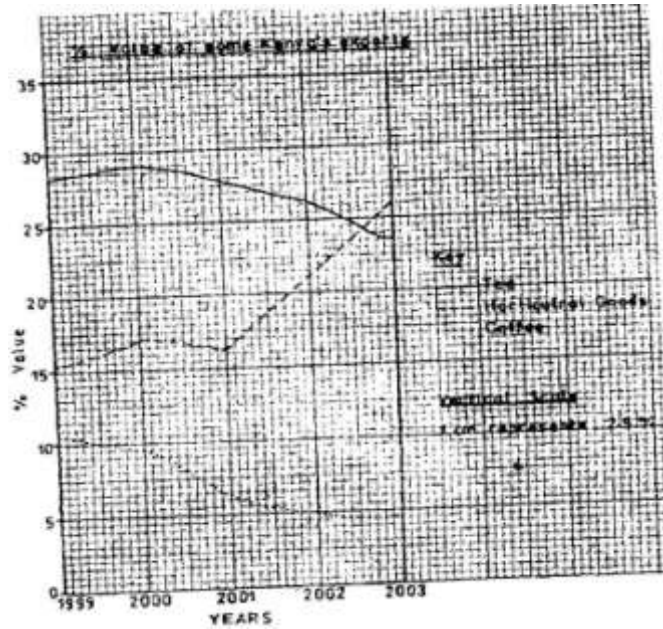
(b) Calculate the percentage increase in population in Kenya between 2000 and 2005 (2 marks)

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13. 2006 Q 6a.

The graph below shows percentage value of some export commodities from Kenya between 1999 and 2003. Use it to answer questions (a) and (b)



(a) (i) What was the percentage value of the tea exported in the year 2000? (2 marks)

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(ii) What was the difference in the percentage values of the horticultural products and coffee exports in 1999? (2 marks)

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(iii) Describe the trend of the value of coffee exports from 1999 to 2003 (3 marks)

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- (iv) Explain three factors which may have led to the increased export earnings from horticultural produce in Kenya between years 1999 and 2003 (6 marks)

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- (v) Give three advantages of using simple line graphs to represent data. (3 marks)

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**14. 2007 Q3a.**

The table below shows petroleum production in thousand barrels per day for countries in the Middle East in April 2006. Use it to answer question (a)

Country	Production in '000" barrels
Iran	3800
Kuwait	2550
Qatar	800
Saudi Arabia	9600
United Arab Emirates	2500
Iraq	1900

- a) (i) What is the difference in production between the highest and the lowest producer (1 mark)

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- (ii) What is the total amount of petroleum produced in April 2006 in the region? (1 mark)

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**15. 2008 Q 8a.**

a) The table below shows the quantity of minerals produced in Kenya in tones between years 2001 and 2005. Use it to answer questions (a)(i) and (ii)

Minerals/Years	2001	2002	2003	2004	2005
Soda ash	297,780	304,110	352,560	353,835	360,161
Flourspar	11,885	85,015	80,201	117,986	109,594
Salt	5,664	18,848	21,199	31,139	26,595
Others	6,093	7,000	4,971	6,315	8,972

*Source: Economic survey 2006*

i) Calculate the average annual production of soda ash over the five year period. (2 marks)

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ii) Calculate the total mineral production for the year 2003 (1 mark)

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iii) Give three use of soda ash. (3 marks)

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**16. 2009 Q 6a.**

The table below shows the number of tourist who visited Kenya from various parts of the world in 2005 and 2006. Use it to answer questions (a) and (b).

Place of origin	No. of tourists per year	
	2005	2006
Europe	942000	965000
Africa	120000	154000
Asia	97000	128000
North America	94000	103000
Australia & New Zealand	19000	24000
All other countries	29000	41000
Total	1,301,000	1,415,000

a (i) Which continent had the highest increase in the number of tourists visiting Kenya between 2005 and 2006?

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(ii) Calculate the percentage increase of tourists from Australia & New Zealand between 2005 and 2006.

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iii) Draw a divided rectangle 15cm long to represent the number of tourists that visited Kenya in 2006. Show your calculations (10 marks)

(b) (i) State two advantages of using divided rectangles to represent geographical data (2 marks)

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(ii) Give four reasons why in 2005 and 2006 there were more tourists visiting Kenya from Europe compared to those from other parts of the world. (4 marks)

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