KENYA NATIONAL ASSESSMENT TESTS
Kenya Certificate of Primary Education

503

– MATHEMATICS –

2020 – 2 hours

INSTRUCTIONS TO CANDIDATES (Please read these instructions carefully)

1. You have been given this question booklet and a separate answer sheet. The question booklet contains 50 questions.
2. Do any necessary rough work in this booklet.
3. When you have chosen your answer, mark it on the **ANSWER SHEET**, not in this question booklet.

HOW TO USE THE ANSWER SHEET

4. Use an ordinary pencil.
5. Confirm that the answer sheet that you have been provided with has the following:
   YOUR INDEX NUMBER
   YOUR NAME
   NAME OF YOUR SCHOOL
6. Do not make any marks outside the boxes.
7. Keep the sheet as clean as possible and do not fold it.
8. For each of the questions 1–50, four answers are given. The answers are lettered A, B, C and D. In each case only **ONE** of the four answers is correct. Choose the correct answer.
9. On the answer sheet, the correct answer is to be shown by drawing a **dark line** inside the box in which the letter you have chosen is written.

   Example:

   In the Question Booklet.

   2. What is the value of $\frac{549 - 243 \div 27}{27}$?

   A. 540
   B. $\frac{34}{81}$
   C. $18\frac{2}{3}$
   D. 20

   The correct answer is D (20)

   On the answer sheet:

   2 [A] [B] [C] ➡ **12** [A] [B] [C] [D] **22** [A] [B] [C] [D] **32** [A] [B] [C] [D] **42** [A] [B] [C] [D]

   In the set of boxes numbered **2**, the box with the letter D printed in it is marked.

10. Your **dark line MUST** be within the box.
11. For each question **ONLY ONE** box is to be marked in each set of four boxes.

This Question Paper consists of 8 printed pages.

RRP Kes 65/Set

1. What is 6075080 written in words?

A. Sixty million seven hundred fifty thousand and eighty.
B. Six million seven hundred fifty thousand and eighty.
C. Sixty million seventy five thousand and eighty.
D. Six million seventy five thousand and eighty.

2. What is the value of $\frac{10+48\div 2-4}{5}$?

A. $4\frac{1}{5}$
B. $4\frac{2}{5}$
C. 6
D. 5

3. What is the value of $\frac{3}{4}\left(\frac{1}{2}+\frac{2}{5}\div\frac{1}{3}\right)-\frac{1}{5}\times\frac{3}{8}$?

A. $1\frac{19}{20}$
B. $1\frac{1}{5}$
C. $\frac{37}{40}$
D. $\frac{2}{5}$

4. What is the value of $(11{\cdot}42-2{\cdot}15)\div 0{\cdot}9$?

A. 1·03
B. 0·103
C. 103
D. 10·3

5. The table below shows prices of stationery in a school kiosk.

Price of items in shillings

Item	Pencil	Envelope	Exercise book	Rubber	Biro pen	Pencil sharpener	Ruler
Price	15	10	40	20	25	35	30

A group of eleven pupils bought stationery in the kiosk as follows: Four pupils bought exercise book, biro pen and pencil each; and the rest bought pencil sharpener and rubber each. What was their total bill?

A. sh 705
B. sh 810
C. sh 645
D. sh 135

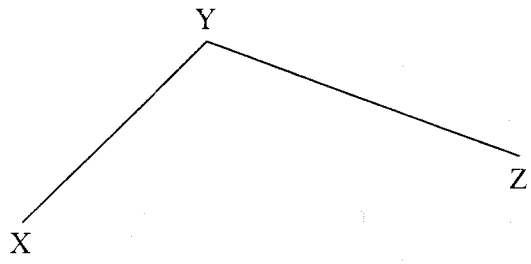
6. What is 30894 rounded off to the nearest hundred?

A. 31000
B. 30890
C. 30000
D. 30900

7. What is the square of the number obtained when multiplied by 4?

A. 6
B. 36
C. 72
D. 1296

8. What is the measure of the reflex angle **XYZ** drawn below?



A. 60°
B. 245°
C. 115°
D. 240°

9. Which one of the expressions below is the simplest form of $7(x+4y+2)+5(2x-y-3$

A. $3x+3y+29$
B. $17x+23y+29$
C. $9x+27y+17$
D. $17x+3y+5$

10. A piece of sugarcane was shared among three pupils, Kioko, Rhoda and Mwite. Rhoda got one third while Mwite got $\frac{2}{7}$ of the sugarcane. Kioko got the remaining part of the sugarcane. Which is the correct order of writing the fractions of the sugarcane each pupil got from the smallest to the largest piece?

A. $\frac{8}{21}, \frac{1}{3}, \frac{2}{7}$
B. $\frac{2}{7}, \frac{1}{3}, \frac{8}{21}$
C. $\frac{1}{3}, \frac{2}{7}, \frac{8}{21}$
D. $\frac{2}{7}, \frac{8}{21}, \frac{1}{3}$

11. A circular field was fenced using 66 posts placed 2 metres apart. What is the area of the field in square metres?
(Take $\pi = \frac{22}{7}$)

A. 1386
B. 2464
C. 616
D. $346\frac{1}{2}$

12. The price of an article was reduced by sh 630. This represented a 30% discount. What was the price of the article after the discount?

A. sh 441
B. sh 1470
C. sh 2100
D. sh 2730

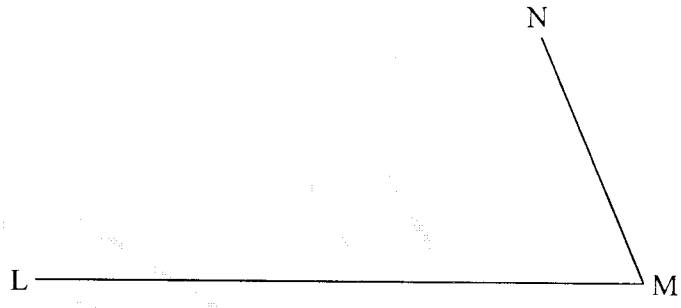
13. What is the next number in the pattern 15, 36, 67, 108, 159, ____?

A. 267
B. 220
C. 200
D. 169

14. What is the value of $ST^2 + 3SR$ if $S = 2$, $T = 3$ and $R = \frac{1}{2}$?

A. 15
B. 39
C. 30
D. 21

15. The figure below is an incomplete quadrilateral **KLMN**. Complete the quadrilateral such that angle **KLM** = 56°.



What is the length of side **KN** in centimetres?

A. 7·3
B. 8·0
C. 3·5
D. 4·5

16. The cash price of a T.V set was sh 30000. The hire purchase price of the T.V was 25% more than the cash price. Musa bought the T.V set on hire purchase terms. He paid a deposit of sh 16500 and 12 equal monthly instalments. How much was each monthly instalment?

A. sh 625
B. sh 1125
C. sh 1750
D. sh 3125

17. Three trucks collect garbage from a residential estate at intervals of 3 days, 4 days and 6 days respectively. If they all collected garbage on 7th May 2015, on which date the same year did they collect garbage together again?

A. 19th May
B. 20th May
C. 11th May
D. 10th May

18. In a certain function the number of children was 200. The number of students was three times that of children and 160 more than that of female adults. The number of male adults was 100 less than that of students. What was the total number of people in the function?

A. 549
B. 1740
C. 1940
D. 2060

19. A company gives a commission on sales above sh 100000. In a certain month a saleslady received a commission of sh 22000 after selling goods worth sh 400000. What was the percentage commission offered?

A. 22
B. $5\frac{1}{2}$
C. $4\frac{2}{5}$
D. $7\frac{1}{3}$

20. Below is a train time table from station **P** to **T**.

Station	Arrival Time	Departure Time
P		0200 h
Q	0250 h	0345 h
R	0500 h	0800 h
S	0930 h	1300 h
T	1440 h	1800 h

What is the difference between the longest time and the shortest time that the train stops at the stations?

A. 2 h 15 min
B. 1 h 45 min
C. 1 h
D. 30 min

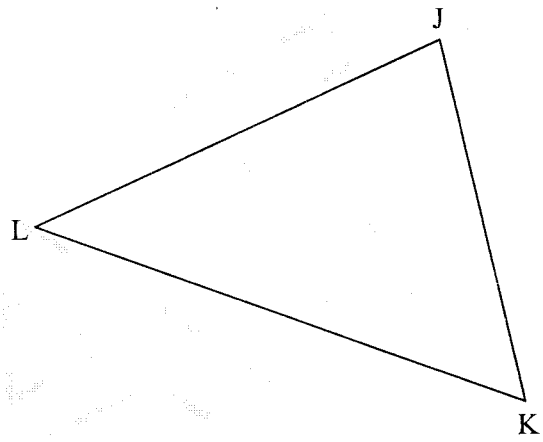
21. The volume of a rectangular container is 7104 cm^3. What is the capacity of the container in litres?

A. 710·4
B. 71·04
C. 7·104
D. 0·7104

22. The mean height of five pupils in a certain class is 1·38 m. The total height of three of the pupils is 4·26 m. What is the mean height of the remaining two pupils?

A. 2·64 m
B. 1·44 m
C. 1·42 m
D. 1·32 m

23. On the triangle **JKL** drawn below, construct line **LM** parallel to line **KJ**. Draw a perpendicular from **J** to meet line **LM** at **N**.



What is the length of line **JN** in centimetres?

A. 5·8
B. 5·2
C. 4·9
D. 4·1

24. The length of a rectangular plot is 60 m and the width is 40 m. The length is decreased by 20% and the width is increased by 10%. What is the percentage decrease in the area of the plot?

A. 2%
B. 28%
C. $13\frac{7}{11}\%$
D. 12%

25. The table below shows Maweu's income from the sale of farm produce, during one year.
The information on the income for sorghum is not given.

Produce	Maize	Beans	Potatoes	Sorghum
Income (sh)	33570	27000	15750	

A pie chart was drawn to represent the information above. If the angle sector representing the income for potatoes was 63°, how much more was the income for maize than the income for sorghum?

A. sh 13500
B. sh 20250
C. sh 42750
D. sh 47250

26. The curved surface of a cylindrical tin is completely covered with a label whose area is 528 cm^2. The height of the tin is 12 cm. What is the radius of the tin in centimetres?
$\left(\text{Take } \pi = \frac{22}{7}\right)$

A. 44
B. 28
C. 14
D. 7

27. What is the value of x in the inequality $\frac{4x-6}{2} < \frac{5x+4}{3}$?

A. $x < 31$
B. $x < 13$
C. $x < 5$
D. $x < 1\frac{2}{11}$

28. The table below shows the sales of brands of soda by a vendor in five days. On Wednesday and Thursday the vendor forgot to record Coke and Sprite sales respectively.

Soda brand	Days					
	Mon	Tue	Wed	Thur	Fri	Total
Stoney	21	23	19	26	14	103
Coke	16	14		20	9	
Krest	24	28	25	34	17	
Sprite	17	19	15		7	70
Total						373

Which was the most popular and least popular brands of soda respectively?

A. Stoney and Sprite
B. Krest and Coke
C. Stoney and Coke
D. Krest and Sprite

29. What must be added to 847 to get the smallest 4-digit number?

A. One hundred and fifty three
B. Two hundred and fifty three
C. Two hundred
D. One thousand

30. In a class of 42 pupils the ratio of boys to girls is 4:3. On a day when a certain number of boys were absent, the new ratio of boys to girls was 8:9. How many more girls than boys were present that day?

A. 10
B. 6
C. 2
D. 8

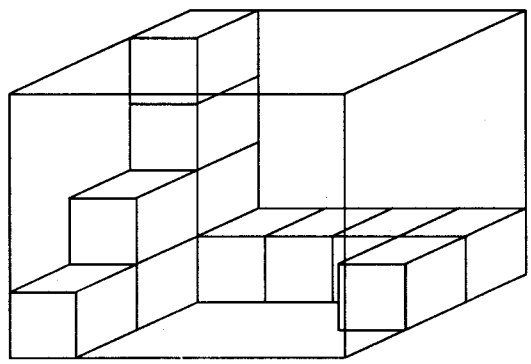
31. At a film show, $\frac{1}{4}$ of the attendants were boys, $\frac{1}{3}$ were girls, $\frac{7}{10}$ of the remainder were male adults and the rest were female adults. What fraction of the total attendants were female adults and girls?

A. $\frac{7}{24}$
B. $\frac{7}{12}$
C. $\frac{11}{24}$
D. $\frac{1}{8}$

32. A rectangular pond has a perimeter of 21 m. The longer side is 6 m. A vertical demarcation is to be constructed along one of the diagonals of the pond. What would be the length of the demarcation?

A. $23\frac{1}{8}$ m
B. $10\frac{1}{2}$ m
C. $7\frac{1}{2}$ m
D. $4\frac{1}{2}$ m

33. How many more cubes are needed to fill the box below?



A. 48
B. 60
C. 36
D. 12

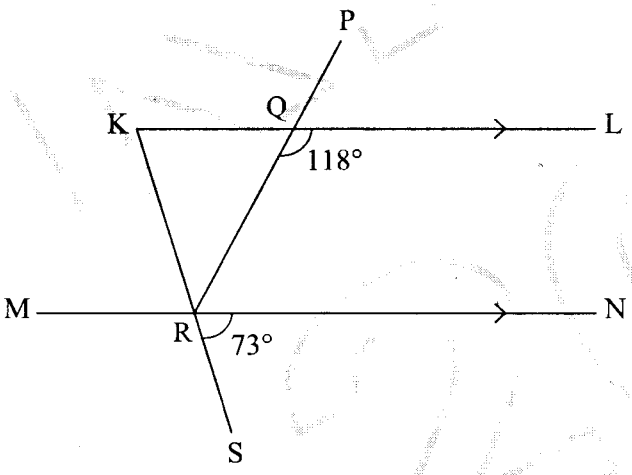
34. Mule left home at 1445 h on Friday for a journey which took $2\frac{1}{3}$ days to complete. On what day and time in a.m./p.m. system did he complete the journey?

A. Sunday 4·45 a.m.
B. Monday 4·45 a.m.
C. Sunday 10·45 p.m.
D. Monday 10·45 p.m.

35. On a map whose scale is 1:20000 a piece of land is represented by a rectangle measuring 7 cm by 5 cm. What is the actual size of this land in hectares?

A. 14
B. 140
C. 1400
D. 14000

36. In the figure below **KL** is parallel to **MN**. **PQR** and **KRS** are straight lines. Angle **LQR** = 118° and angle **NRS** = 73°.



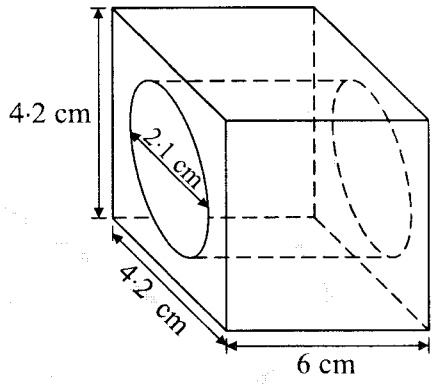
What is the size of angle **KRQ**?

A. 135°
B. 107°
C. 45°
D. 62°

37. In a game park there were gazelles, monkeys, hyenas and giraffes. The number of hyenas was 862 which was 516 more than that of giraffes and 189 less than that of monkeys. The total number of animals in the park was 5168. How many gazelles were in the park?

A. 2909
B. 3601
C. 2259
D. 1877

38. The diagram below represents a rectangular solid 6 cm long, 4·2 cm wide and 4·2 cm high from which a cylinder of diameter 2·1 cm has been removed.



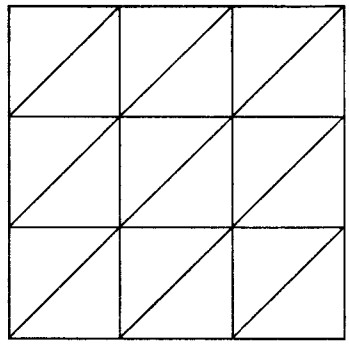
What is the volume of the remaining solid in cm^3? $\left(\text{Take } \pi = \frac{22}{7}\right)$

A. 20·79
B. 85·05
C. 105·84
D. 126·63

39. Five people can complete a piece of work in 6 hours. If the number of people is decreased by 2, how many hours more would it take the people working at the same rate to complete the work?

A. 10
B. 16
C. 4
D. 9

40. The figure below is made up of right angled triangles.



How many right angled triangles are there altogether?

A. 18
B. 20
C. 26
D. 24

41. Mariam bought the following items from a shop:

3 rolls of toilet paper @ sh 37
$\frac{3}{4}$ kg of cooking fat @ sh 144 per kilo
2 kg packet of rice for sh 215
2 bottles of yogurt @ sh 70

She gave the shopkeeper a sh 1000 note. What balance did she get?

A. sh 574
B. sh 534
C. sh 426
D. sh 211

42. The table below shows the International Postage charges for air mail.

TYPE OF ARTICLE AND MAXIMUM MASS	Countries within East Africa zone		Countries within the rest of Africa zone		Countries within Europe, Middle & Near East zone		Australia, America & Far East zone	
LETTERS Maximum Mass 2 Kg	sh	ct	sh	ct	sh	ct	sh	ct
Up to 20 g	45	00	55	00	60	00	80	00
Over 20 g up to 50 g	90	00	100	00	160	00	200	00
Over 50 g up to 100 g	170	00	200	00	310	00	390	00
Over 100 g up to 250 g	410	00	475	00	780	00	980	00
Over 250 g up to 350 g	580	00	680	00	1095	00	1380	00
Over 350 g up to 500 g	830	00	970	00	1565	00	1970	00
Over 500 g up to 1 kg	1240	00	1450	00	2360	00	2950	00
Over 1 kg up to 2 kg	1640	00	1930	00	3130	00	3920	00

[illegible] sent a 150 g letter to her cousin in Ghana, a 1.5 kg letter to her friend in Europe and a 1 kg letter to her daughter in America. How much did she pay for the postage of the letters?

A. sh 7525
B. sh 7345
C. sh 6555
D. sh 6490

43. A plot of land is in the shape of a parallelogram of sides 450 m by 380 m. The perpendicular distance between the shorter sides is 360 m. What is the area of the plot in hectares?

A. 17.1
B. 16·2
C. 14·94
D. 13.68

44. The number of yellow cars in a garage was y. The number of white cars in the garage was three times that of red cars but was 9 more than that of yellow cars. Which one of the expressions below shows the total number of cars in the garage?

A. $2\frac{1}{3}y+18$
B. $2\frac{1}{3}y+12$
C. $2\frac{1}{3}y-12$
D. $5y+36$

45. Subira bought 1785 mangoes at sh 20 for every pile of 5 mangoes. She resold the mangoes in piles of 3. If she sold all the mangoes and made a 25% profit, at what price did she sell each pile of mangoes?

A. sh 15
B. sh 12
C. sh 9
D. sh 5

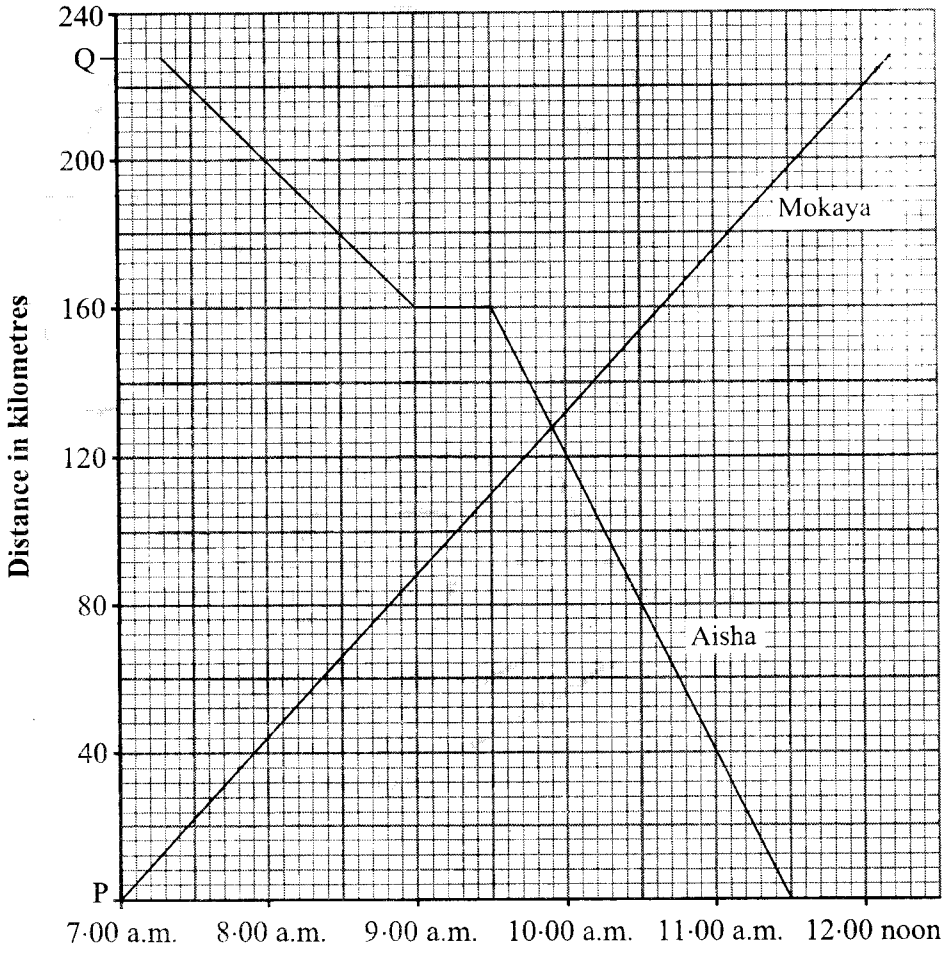
46. Ochome borrowed a loan from a bank at a simple interest of 12% p.a. After 18 months, he had paid a total interest of sh 3780. How much money had he paid altogether?

A. sh 21000
B. sh 24780
C. sh 17220
D. sh 5530

47. In one season, Sangale hired a piece of land for sh 15000. He sowed 3 bags of maize which he had bought for sh 3600 each. He also spent sh 6000 for ploughing, sh 3000 for sowing, sh 10200 for fertilizers and sh 6000 for harvesting. He harvested 60 bags of maize which he sold for sh 2700 per bag. What profit did he make from cultivation of maize that season?

A. sh 111000
B. sh 162000
C. sh 118200
D. sh 51000

48. The graph below shows journeys of Mokaya and Aisha. Mokaya travelled from **P** to **Q** while Aisha travelled from **Q** to **P**.



On her way, Aisha stopped to rest. How far from **Q** was Mokaya when Aisha resumed her journey?

A. 140 km
B. 128 km
C. 118 km
D. 110 km

49. Memusi left home for town, a distance of 30 km, at 7·00 a.m. After cycling for 5 km at a speed of 10 km/h, the bicycle got a puncture which took 15 minutes to repair. He continued cycling at twice the previous speed. At what time did he arrive in town?

A. 9·00 a.m.
B. 10·00 a.m.
C. 8·45 a.m.
D. 10·15 a.m.

50. What is the sum of the prime numbers between 1 and 30?

A. 133
B. 127
C. 112
D. 139