THE KENYA NATIONAL EXAMINATIONS COUNCIL
Kenya Certificate of Primary Education

503 — MATHEMATICS —

Mar. 2021 – 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:

12. What is the value of $\frac{6(24-18)+6\times 4}{6}$?
A. 30
B. 25
C. 10
D. 28

The correct answer is C

On the answer sheet:

In the set of boxes numbered **12**, draw a **dark line** inside the box with the letter C printed in it as indicated below.

12 [A] [B] [C] [D]

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 16 printed pages.

910503

Turn over

Working Space

1. What is 2085407 written in words?

   A. Twenty million eight hundred fifty four thousand and seven.
   B. Two million eight hundred five thousand four hundred and seven.
   C. Two million eighty five thousand four hundred and seven.
   D. Two million eighty five thousand and forty seven.

2. What is 689.975 rounded off to the nearest hundredths?

   A. 700
   B. 690
   C. 689.98
   D. 689.97

3. What is the sum of the total values of digits 7 and 3 in the number 57438?

   A. 7300
   B. 7030
   C. 7000
   D. 6970

4. What is the value of $40+3(8-5)-7\times6\div3$?

   A. 84
   B. 45
   C. 35
   D. 29

5. What is the value of x in the equation $2x+\frac{1}{3}(6x-3)=21$?

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

6. Which one of the ratios given below represents 75%?

   A. 4:3
   B. 4:7
   C. 3:7
   D. 3:4

7. Chelimo bought the following items from a shop:

3 packets of maize flour @ sh 120
2 kg of beans for sh 170
1½ kg of potatoes @ sh 40 per kg
3 loaves of bread @ sh 50

How much money did he pay for all the items?

A. sh 380
B. sh 720
C. sh 740
D. sh 910

8. Which one of the following statements is correct?

A. 0.72 is greater than $\frac{8}{11}$
B. 0.72 is equal to $\frac{8}{11}$
C. $\frac{8}{11}$ is less than 0.72
D. $\frac{8}{11}$ is greater than 0.72

9. The area of a square is 2 704 cm^2. What is the length of one side of the square?

A. 52 cm
B. 208 cm
C. 676 cm
D. 1 352 cm

10. What is the next number in the following pattern? 6, 9, 14, 21, 30, 41, _____.

A. 54
B. 53
C. 52
D. 44

11. A football match started at 2.45 p.m. After 45 minutes, there was a 15 minutes break. The match then took 50 minutes to end. At what time in 24 hour system did the match end?

A. 1635 h
B. 1620 h
C. 1605 h
D. 0435 h

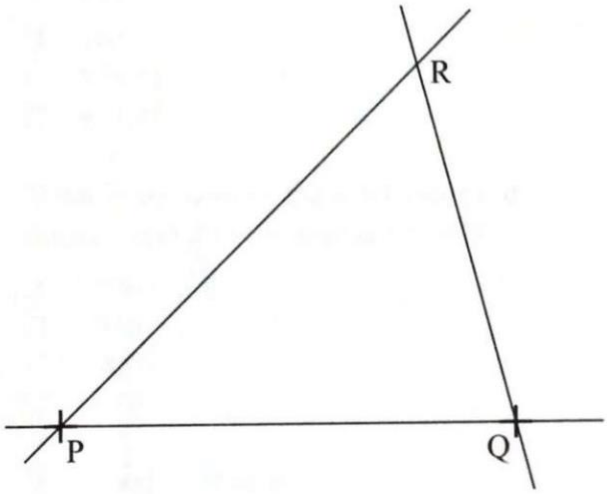
Working Space

Working Space

12. Maria bought 160 mangoes at sh 10 each. She paid sh 200 for transport to the market. She sold the mangoes and made a 60% profit. What was the selling price of each mango?

A. sh 20.00
B. sh 16.00
C. sh 16.75
D. sh 18.00

13. Triangle PQR below has been drawn accurately. Measure angle PQR.



What is the size of angle PQR?

A. 105°
B. 75°
C. 60°
D. 45°

14. A cultural show was attended by 986 male adults, 2 807 female adults and 5 145 children. How many more children than adults attended the show?

A. 4159
B. 3793
C. 2338
D. 1352

15. What is the value of $\frac{3}{5}+\frac{1}{4}-\frac{1}{3}\div\frac{1}{2}$

A. $1\frac{1}{30}$

B. $\frac{151}{180}$

C. $\frac{11}{60}$

D. $\frac{41}{60}$

16. A school bought 10 litres of milk on Monday, 30 litres on Tuesday and 20 litres on Wednesday. The school also bought equal number of litres on Thursday and Friday. The milk bought in the five days was 150 litres. In a pie chart, what angle would represent the amount of milk bought on Friday?

A. 216°
B. 108°
C. 72°
D. 48°

17. Three bulbs P, Q and R are set to flash after 18 minutes, 24 minutes and 36 minutes respectively. The bulbs are set on at the same time. After how many minutes will they all flash at the same time?

A. 78
B. 72
C. 26
D. 6

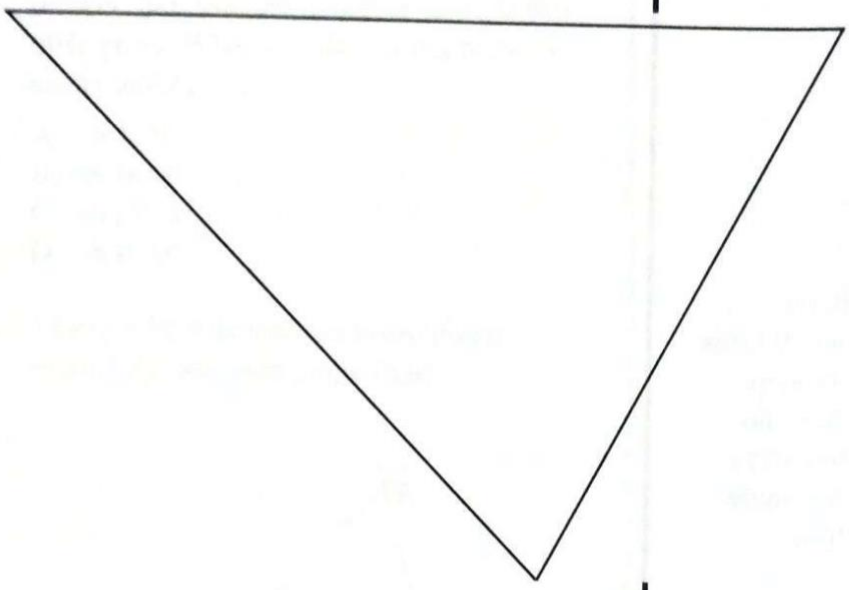
18. A farmer harvested 1 800 bags of beans. She sold 0.75 of the bags and gave 0.1 of the remainder to a charitable organisation. How many bags of beans did she remain with?

A. 1 350
B. 450
C. 405
D. 45

Working Space

Working Space

19. The figure below is a map of a forest drawn to a scale of 1:500 000.



What is the perimeter of the forest in kilometres?

A. 14 500
B. 1 450
C. 145
D. 14.5

20. A cylindrical solid has a circumference of 132 cm and height of 30 cm. What is the surface area of the solid?
(Take $\pi = \frac{22}{7}$)

A. 6 732 cm^2
B. 5 346 cm^2
C. 3 960 cm^2
D. 2 772 cm^2

21. In a farm there are cattle, sheep and goats. The number of cattle is three times the number of goats. The number of sheep is six less than that of the cattle. If the number of goats is g, how many animals are there in the farm?

A. $8g - 6$
B. $7g + 6$
C. $7g - 6$
D. $5g - 6$

22. A salesman is paid a monthly salary of sh 6 000 and a commission of 5% for sales above sh 50 000. In a certain month, the salesman's total earnings were sh 15 000. What was the total sales for the month?

A. sh 230 000
B. sh 180 000
C. sh 170 000
D. sh 130 000

23. Auma had 7 one thousand shilling notes, 6 five hundred shilling notes and 12 two hundred shilling notes. She changed the money into fifty shilling notes. How many fifty shilling notes did she get?

A. 128
B. 198
C. 204
D. 248

24. The length of a rectangular garden is 32 m. Each of the diagonals of the garden is 40 m. What is the width of the garden?

A. 12 m
B. 24 m
C. 48 m
D. 576 m

25. A family uses five packets of milk everyday. Each packet contains 500 ml. How many litres of milk would the family use in the month of August?

A. 77.5
B. 75
C. 15.5
D. 7.75

26. A farmer planted 24 000 seedlings in the first year. In the second year, the farmer increased the seedlings by 20%. How many seedlings did the farmer plant in the second year?

A. 4 800
B. 19 200
C. 20 000
D. 28 800

Working Space

Working Space

27. A lorry was loaded with 40 bags of maize and 48 cartons of cooking oil. The mass of each bag of maize was 90.5 kg. Each carton of cooking oil contained 24 tins each weighing 2 kg. What was the total mass of the load in kilograms?

A. 2 304
B. 3 620
C. 4 772
D. 5 924

28. Keya spent $\frac{1}{4}$ of his money on buying school uniform for his daughter, $\frac{1}{3}$ on books and $\frac{2}{3}$ of the remainder on food. The rest of the money was saved.

What fraction of the money was saved?

A. $\frac{5}{36}$
B. $\frac{7}{12}$
C. $\frac{5}{18}$
D. $\frac{31}{36}$

29. The cash price of a television set was sh 22 500. The hire purchase price was 10% more than the cash price. Nikita bought the television on hire purchase terms by paying a deposit and 15 equal monthly instalments of sh 1 155. How much deposit did she pay?

A. sh 2 250
B. sh 2 925
C. sh 5 175
D. sh 7 425

30. On the line drawn below, construct a rhombus PQRS of side 5 cm in which angle PQR = 60°. Draw the diagonals PR and QS to intersect at O.

What is the length of PO?

A. 8.6 cm
B. 5.0 cm
C. 4.3 cm
D. 2.5 cm

31. Six men can complete digging a shamba in 12 days. If 2 of these men failed to do the work, how many more days would it take the remaining men to complete the work?

A. 6
B. 18
C. 24
D. 30

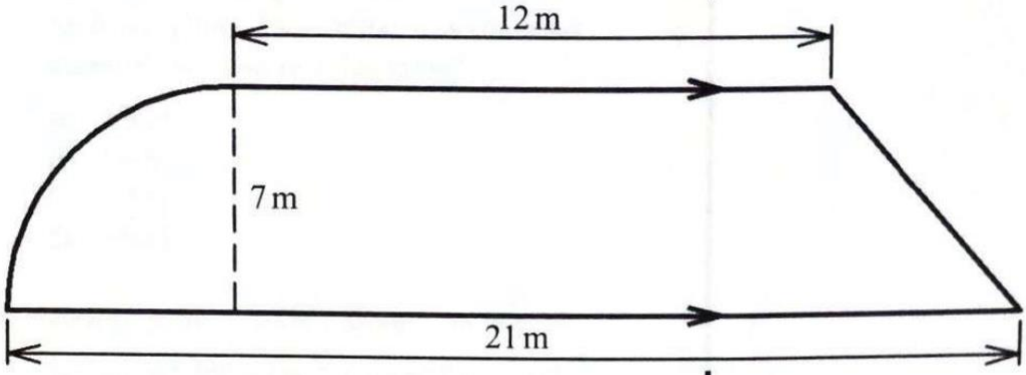
32. A cylindrical rod of diameter 14 cm has a height of 20 cm. What is the volume of the rod? (Take $\pi = \frac{22}{7}$)

A. 880 cm^3
B. 1 188 cm^3
C. 3 080 cm^3
D. 12 320 cm^3

Working Space

Working Space

33. The figure below represents a flower garden. It is in the shape of a quarter circle of radius 7 metres and a trapezium.



What is the area of the flower garden?

(Take $\pi = \frac{22}{7}$)

A. $220.5\,m^2$
B. $168\,m^2$
C. $154\,m^2$
D. $129.5\,m^2$

34. What is the value of $\frac{0.3 + 0.4 \div 0.25}{0.2}$?

A. 14.0
B. 9.5
C. 8.3
D. 3.1

35. The table below shows a bus timetable from Nyeri to Mombasa.

Town	**Arrival time**	**Departure time**
Nyeri		6.15 a.m
Nairobi	9.00 a.m	9.45 a.m
Mtito Andei	2.30 p.m	3.00 p.m
Voi	5.15 p.m	5.15 p.m
Mombasa	7.45 p.m	

How long did the bus take to travel from Nairobi to Voi?

A. 8 h 30 min
B. 7 h 30 min
C. 7 h 0 min
D. 8 h 15 min

36. The perimeter of a rectangular piece of land is 856 m. The length of the land is 298 m. What is the width of the land?

A. 130 m
B. 214 m
C. 260 m
D. 279 m

37. Otieno invested sh 15 000 in a financial institution. The institution paid a compound interest at the rate of 6% per annum. How much money did Otieno have in the institution altogether after 2 years?

A. sh 16 854
B. sh 16 800
C. sh 15 900
D. sh 1 854

38. What is the value of when $2x + y(x + z)$ when $x = y = 2$ and $z = 3$?

A. 9
B. 11
C. 12
D. 14

39. A car travelled 288 km at an average speed of 96 km/h. On the return journey, the average speed was reduced to 72 km/h. What was the average speed for the whole journey?

A. $38\frac{2}{5}$ km/h

B. $41\frac{1}{7}$ km/h

C. $82\frac{2}{7}$ km/h

D. 84 km/h

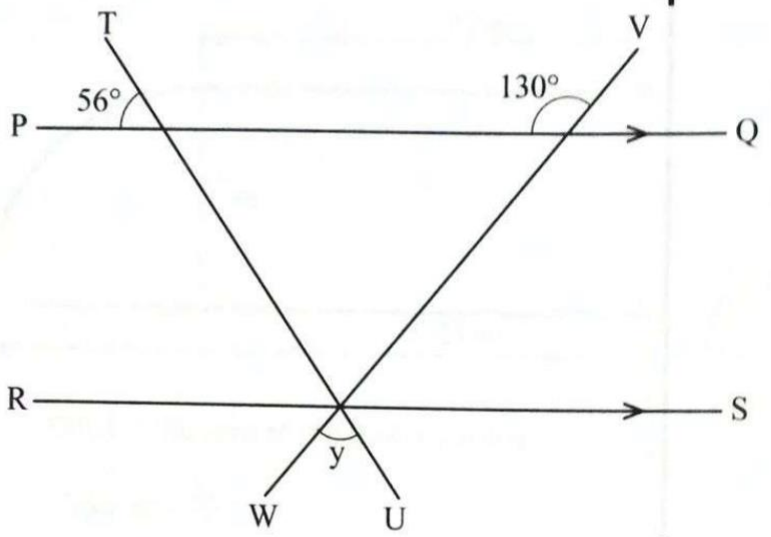
40. A rectangular tank of water is 2.5 m long, 1.5 m wide and 2.0 m high. The tank is full of water. What is the amount of water, in litres, in the tank?

A. 7.5
B. 2 500
C. 5 000
D. 7 500

Working Space

Working Space

41. In the figure below, lines PQ and RS are parallel. Lines TU and VW are transversals.



What is the size of angle y?

A. 50°
B. 56°
C. 74°
D. 130°

42. The table below shows the amount of milk delivered to a hotel in 6 days.

Days	Mon	Tue	Wed	Thur	Fri	Sat
Milk in litres	24	27	25	29	25	26

What was the average amount of milk delivered to the hotel per day?

A. 27
B. 26
C. 25.5
D. 25

43. The following are properties of a certain quadrilateral.

Diagonals intersect at right angles.
Opposite sides are equal and parallel.
All angles are right angles.
Diagonals are equal.

What is the name of the quadrilateral?

A. Trapezium
B. Square
C. Parallelogram
D. Rhombus

44. Ann paid sh 2 210 for a blanket after getting a 15% discount. What was the marked price of the blanket?

A. sh 2 600.00
B. sh 2 541.50
C. sh 1 921.70
D. sh 1 878.50

45. The perimeter of an isosceles triangle is 36 cm. Two of the sides of the triangle measures 13 cm and 10 cm. What is the area of the triangle?

A. 30 cm^2
B. 60 cm^2
C. 65 cm^2
D. 120 cm^2

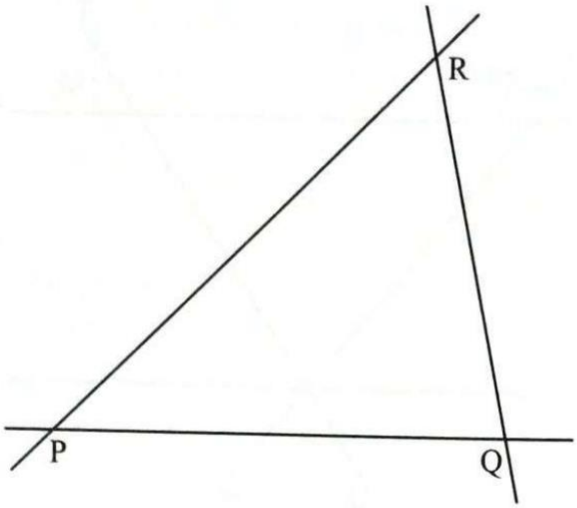
46. Three farmers Mutiso, Asha and Maloba delivered maize to a miller. Mutiso delivered 14 290 bags. Asha delivered 1 300 bags less than Mutiso. Maloba delivered 1 530 more bags than Asha. What was the total number of bags of maize delivered to the miller by the farmers?

A. 47 000
B. 41 800
C. 38 740
D. 17 120

Working Space

Working Space

47. The figure below shows triangle PQR. Construct a circle that passes through the points P, Q and R of the triangle.



What is the diameter of the circle?

A. 1.6 cm
B. 3.2 cm
C. 3.6 cm
D. 7.2 cm

48. Three traders Kamau, Adhiambo and Moraa decided to raise money to start a project. Kamau contributed sh$x$ while Adhiambo contributed $\frac{1}{3}$ of what Kamau contributed. Moraa contributed sh 1 000 less than the total amount contributed by both Kamau and Adhiambo. The total amount contributed by the traders was sh 15 000. Which one of the following equations can be used to find the amount contributed by each trader?

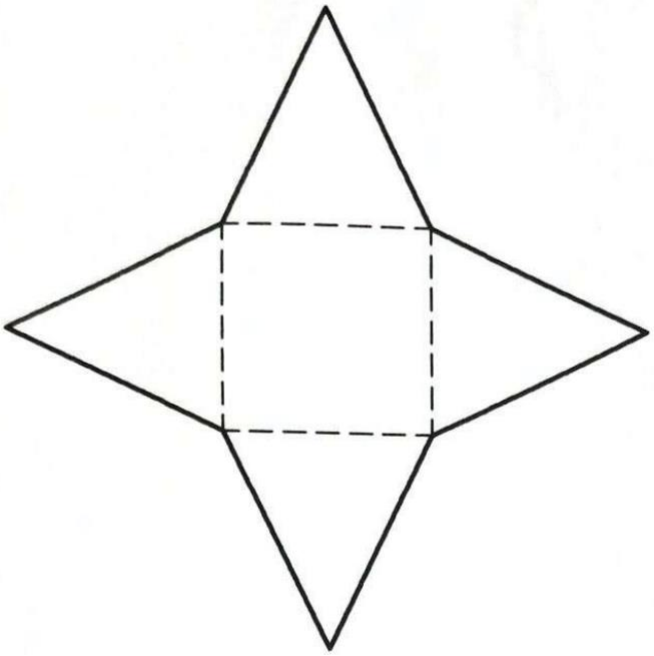
A. $2\frac{2}{3}x - 1000 = 15\,000$

B. $2\frac{2}{3}x + 1\,000 = 15\,000$

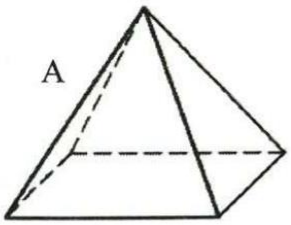
C. $1\frac{1}{3}x - 1\,000 = 15\,000$

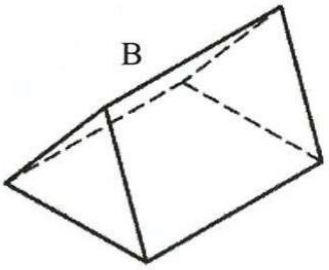
D. $8x - 1\,000 = 15\,000$

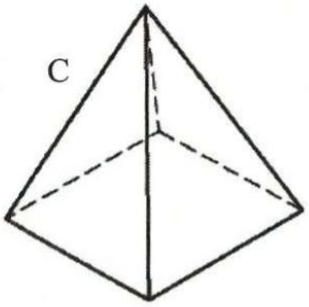
49. The figure below represents a net of a solid.

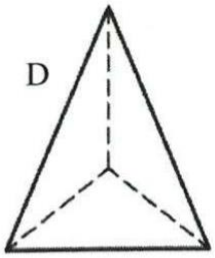


The net is folded to form a solid. Which one of the following figures would show the solid formed?



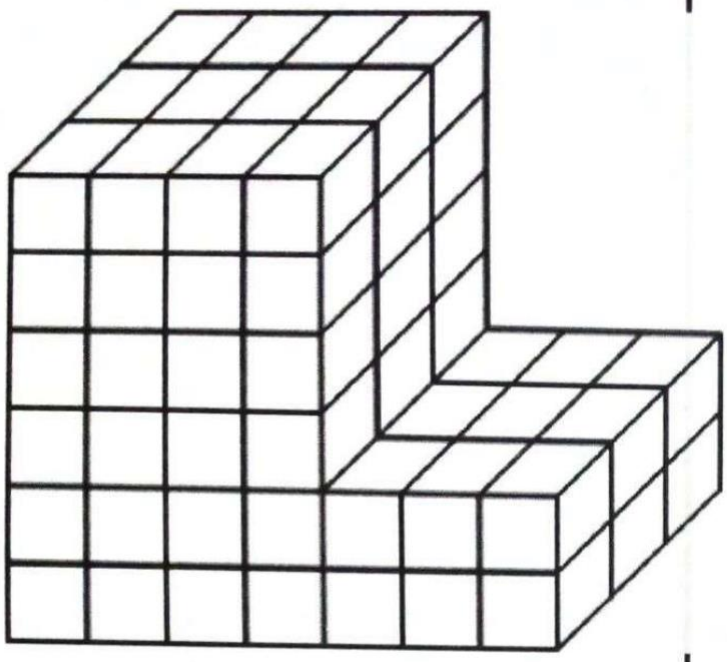






Working Space

50. The figure below represents a stack made of cubes.



How many cubes were used to make the stack?

A. 36
B. 52
C. 90
D. 126

Working Space