



MATHEMATICS

Time: 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 the question booklet.

HOW TO USE THE ANSWER SHEET.

4. Use an ordinary pencil.
5. Make sure that you have written on the answer sheet:
YOUR INDEX NUMBER
YOUR NAME
NAME OF YOUR SCHOOL
6. By drawing a **dark line** inside the correct numbered boxes, mark your full Index Number (i.e. School Code Number and the three-figure Candidate's Number) in the grid near the top of the answer sheet.
7. Do not make any marks outside the boxes.
8. Keep your answer sheet as clean as possible and **do not fold it**.
9. For each of the questions 1-50, four answers are given. The answers are lettered A, B, C, D. In each case, only **ONE** of the four answers is correct. Choose the correct answer.
10. On the answer sheet, show the correct answer by drawing a **dark line** inside the box in which the letter you have chosen is written.

Example:

In the Question Booklet:

11. Simplify the following : $3(x + 2y + 6) + x - 3$
- A. $4x + 6y - 15$
 - B. $4x + 6y + 15$
 - C. $4x + 6y - 21$
 - D. $4x + 6y + 21$

The correct answer is B.

On the Answer sheet:

1 [A] [B] [C] [D] **11** [A] [B] [C] [D] **21** [A] [B] [C] [D] **31** [A] [B] [C] [D] **41** [A] [B] [C] [D]

In the set of boxes number 11, the box with letter **B** printed in it is marked.

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

This question paper consists of 8 printed pages.

1. What is sixteen million six hundred and six thousand and six and six hundredths written in symbols?
 A. 16606006.6
 B. 16606060.06
 C. 16666006.06
 D. 16606006.06

2. What is $\frac{5}{7}, \frac{5}{6}, \frac{13}{21}, \frac{11}{14}$ arranged in descending order?

A. $\frac{5}{6}, \frac{11}{14}, \frac{5}{7}, \frac{13}{21}$

B. $\frac{13}{21}, \frac{5}{7}, \frac{11}{14}, \frac{5}{6}$

C. $\frac{13}{21}, \frac{11}{14}, \frac{5}{7}, \frac{5}{6}$

D. $\frac{5}{6}, \frac{5}{7}, \frac{11}{14}, \frac{13}{21}$

3. What is the value of $\frac{9.1 \times 0.39 \times 7.8}{1.3 \times 13 \times 0.026}$?

- A. 6.3
 B. 63
 C. 0.63
 D. 630

4. What is the difference between $\left(\frac{3}{4}\right)^2$ and square root of $1\frac{7}{9}$?

- A. $1\frac{7}{9}$
 B. $\frac{9}{16}$
 C. $\frac{37}{48}$
 D. $1\frac{1}{3}$

5. During an election, four candidates contested for a seat. The result showed that the winner got 6402 more votes than the second candidate. The second candidate got 4002 more votes than the third candidate. The fourth candidate got 972 less votes than the third candidate. If the third and the fourth candidates got a total of 2418 votes, how many votes did the winner get?

- A. 13794
 B. 12099
 C. 5697
 D. 1695

6. What is the value of $\frac{4(2^2 + 3^2) - 6 \times 8 \div 2}{2^2}$?

- A. 7
 B. 28
 C. 46
 D. 14

7. What is the place value of digit 0 in the product of 1.040 and 1.050?

- A. Thousandths.
 B. Thousands.
 C. Hundredths.
 D. Tenths.

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

- A. $\frac{3}{20}$
 B. $1\frac{3}{10}$
 C. $1\frac{3}{20}$
 D. $1\frac{29}{60}$

9. What is the next number in the pattern below?

4, 11, 22, 35, 52, _____?

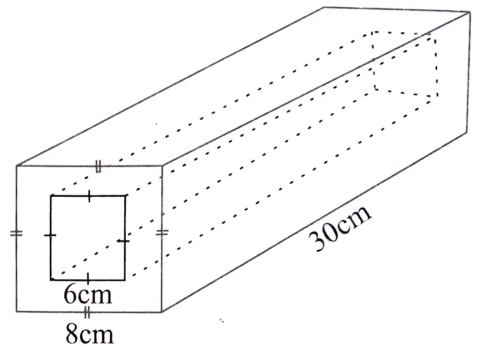
- A. 75
 B. 77
 C. 74
 D. 71

10. Komu refuels his car after every 6 days, Otiemo refuel hers after every 8 days while Kantu refuel his after every 12 days. If they all refueled their cars on 2nd February 2022, on which date did they refuel their cars together again?

- A. 25th February 2022
 B. 26th February 2022
 C. 27th February 2022
 D. 24th February 2022

11. What is the smallest seven digits number that can be formed when the digits in the number 6908347 are rearranged?
- A. 0346789
B. 9876430
C. 3046789
D. 3406789
12. In a hall, $\frac{1}{12}$ of the furniture are cupboard, $\frac{2}{11}$ of the remainder are tables and the rest are chairs. If tables are 36, how many chairs are there?
- A. 162
B. 27
C. 108
D. 324
13. The price of an item increased by sh. 80. If this represents an increase by 20%, what was the price after the increase?
- A. sh. 320
B. sh. 480
C. sh. 400
D. sh. 420
14. What is 2399.9967 rounded off to the nearest hundredths?
- A. 2399.99
B. 2400
C. 2400.00
D. 2399.00
15. The area of a square piece of land is 0.16hectares. What is its perimeter in metres?
- A. 40m
B. 320m
C. 0.64m
D. 160m

16. The figure below is a solid with a hole drilled through



What is its volume in cubic centimetres?

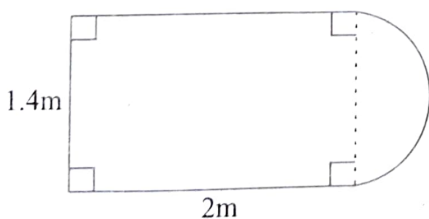
- A. 840
B. 1920
C. 1080
D. 3000
17. A cylindrical solid has a circumference of 88cm and a height of 30cm, what is its surface area?
- A. 1232cm^2
B. 2640cm^2
C. 3872cm^2
D. 18480cm^2
18. A watch loses 5 seconds every hour. It was set correct on Monday at 9.30am. What time was it showing on Monday the following week at 9.30am?
- A. 9.44am
B. 9.16am
C. 9.16pm
D. 9.44pm

19. A milk factory was supplied with 6000 litres of milk by some farmers. The milk was then packed in 4-decilitre packets. How many packets were packed?
- A. 15000
B. 150
C. 1500
D. 15

20. The mass of an empty carton is 150g. Each carton is packed with twenty 500g packets of detergent. What is the mass of such 100 cartons in tonnes?
- A. 1015000
B. 1015
C. 10.15
D. 1.015

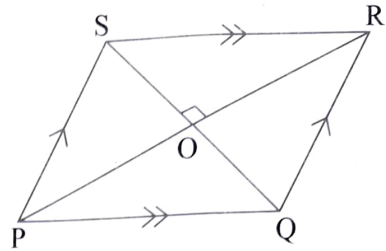
21. Electricity poles are fixed at a regular interval of 50metres. How many poles are used at a distance of 4 kilometres?
- A. 81
B. 80
C. 200
D. 201

22. What is the area of the figure below in square centimetres?



- A. 2.8
B. 3.57
C. 357
D. 35700

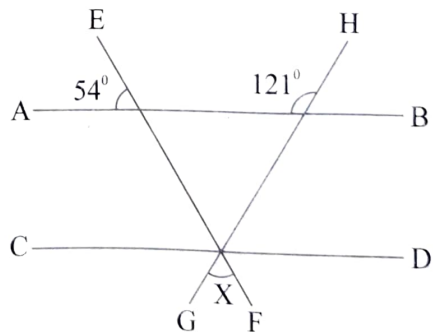
23. The figure below shows a rhombus PQRS. Diagonals PR=8cm and QS=6cm. O is the centre of the rhombus.



What is the perimeter of the rhombus?

- A. 40cm
B. 28cm
C. 20cm
D. 14cm
24. A motorist took 3hours to travel from home to town at a speed of 60km/hr. In the return journey, he increased the speed by 30km/h. What was his average speed in the whole journey?
- A. 90km/h
B. 81km/h
C. 36km/h
D. 72km/h

25. In the figure below line AB is parallel to line CD. Lines EF and GH are transversals.



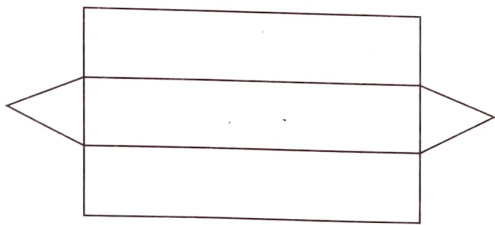
What is the size of angle X?

- A. 59°
B. 67°
C. 126°
D. 77°

26. Construct a rhombus WXYZ of sides 7cm and angle WXY = 130° . Draw and measure the longer diagonal.
- A. 5.8cm
B. 11.6cm
C. 12.5cm
D. 7.4cm

27. The following are properties of triangles. Which property is not true about a right angled triangle only?
- A. Two sides are perpendicular.
B. All angles are equal.
C. Two opposite interior angles add upto one exterior angle.
D. Interior angles add upto 180° .

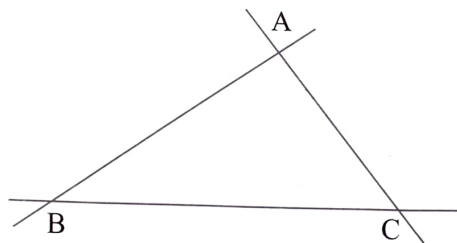
28. The figure below represents a net of a solid.



What is the name of the solid formed when the net is folded?

- A. Triangular pyramid.
B. Triangular cuboid.
C. Rectangular prism.
D. Triangular prism.

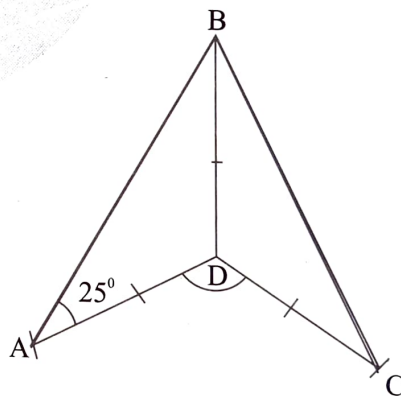
29. The triangle below is drawn accurately



What is the measure of angle BAC?

- A. 30°
B. 94°
C. 70°
D. 130°

30. In the figure below, triangles ABD and BCD are isosceles. $AB = BD = DC$. $AB = BC$



What is the size of angle marked D?

- A. 130°
B. 260°
C. 100°
D. 230°

31. Andese paid sh. 4800 for a radio after being allowed a discount of 20%. How much would he pay if he was allowed a discount of 10%?

- A. sh. 6000
B. sh. 6600
C. sh. 600
D. sh. 5400

32. Wanjiku bought forty pawpaw at sh. 20 each. She spent sh. 200 for transportation. During transportation, five pawpaws got spoilt. She however sold the remaining pawpaw at sh. 40 each. What was her percentage profit?
 A. 40%
 B. 20%
 C. $28\frac{4}{7}\%$
 D. 30%
33. A sales agent is paid a basic salary of sh. 26000 plus a 8% commission on value of goods sold above sh. 100000. In one month he earned a total of sh.42000. What was the commissionable sales?
 A. sh. 200000
 B. sh. 300000
 C. sh. 34000
 D. sh. 168000
34. The cash price of a machine was sh. 50000. The hire purchase price of the machine was 20% more than the cash price. A trader paid a deposit of sh. 18000 and the rest in a number of months each sh. 3000. For how many months did he pay the instalments?
 A. 14
 B. 12
 C. 20
 D. 6
35. Obel deposited sh. 24000 in a bank. At the end of 5years, he withdrew all his money from the bank. The total amount withdrawn was sh. 30000. What interest percent per annum did the bank pay?
 A. 10%
 B. 12%
 C. 4%
 D. 5%
36. Teckla was given 2 one thousand-shilling notes to buy the following items
 $1\frac{1}{2}$ litres of cooking oil at sh. 360 per litre
 500g packet of powdered detergent @ sh.280
 Three 2kg packets of wheat flour @ sh. 180
 Two loaves of bread for sh. 130
 How much balance did she get?
 A. sh. 1310
 B. sh. 1490
 C. sh. 510
 D. sh. 560
37. Katua had 210 fifty shilling-notes. He changed sh. 3000 into one thousand shilling-notes and the rest into five hundred shilling notes. How many five hundred shilling-notes did he get?
 A. 21
 B. 15
 C. 6
 D. 20
38. Twelve workers can complete a piece of work in 18days. How many more workers can complete the same work in 9 days?
 A. 24
 B. 12
 C. 6
 D. 8
39. A distance of 7 kilometres is represented by 4cm on a map. What is the scale used?
 A. 1:175000
 B. 1:1.75
 C. 1:17500
 D. 1:1750

40. In a garage there were x pickups. The number of cars was four times that of pickups. The number of buses was 6. If there were 36 vehicles, which of the below equations represents this information?
- A. $x+10=36$
 B. $5x-6=36$
 C. $4x+6=36$
 D. $5x+6=36$
41. What is the value of $2a+b(a+c)$ given that $a=6$, $c=4$ and $b=a-c$?
- A. 12
 B. 22
 C. 32
 D. 42
42. What is the value of p in $\frac{2p}{4} + \frac{p}{2} + 1 = 20$?
- A. 19
 B. 21
 C. 17
 D. 22
43. What is $4y+6-8>26$ in simplest form?
- A. $y > 6$
 B. $y < 7$
 C. $y < 6$
 D. $y > 7$
44. In a meeting the ratio of men, youths to women was 3:5:4. There were 24 women, how many more youths than men were there?
- A. 72
 B. 30
 C. 12
 D. 32
45. The mean of eight numbers is $3\frac{3}{4}$. Seven of these numbers are 4, 3, 6, 2, 5, 4 and 1. What is the difference between the eighth number and the mean?
- A. $1\frac{1}{4}$
 B. 5
 C. $2\frac{3}{4}$
 D. $2\frac{1}{4}$

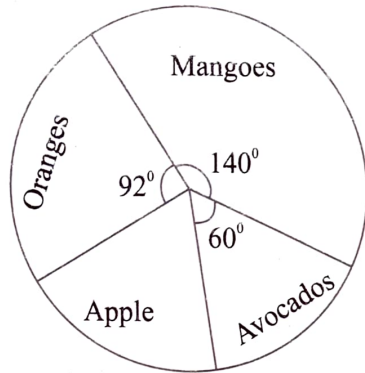
46. The table below shows international postal charges for parcels.

Mass step	Countries within East Africa	Rest of Africa	Europe middle and near East	Australia and far East America
upto 10kg	180.00	200.00	210.00	230.00
over 10kg-20kg	240.00	250.00	270.00	300.00
over 20kg-30kg	300.00	320.00	340.00	360.00
over 30kg-40kg	360.00	400.00	420.00	400.00
over 40kg-50kg	400.00	450.00	480.00	500.00

Wasanga sent two parcels of mass 29.9kg to Nigeria and 44kg to Japan(far East). How much did he pay for postage?

- A. sh. 320
 B. sh. 820
 C. sh. 900
 D. sh. 760

47. The pie chart below shows different types of fruits sold by a fruit vendor.



If she sold 34 apples, how many more mangoes than oranges did she sell?

- A. 24
- B. 70
- C. 46
- D. 116

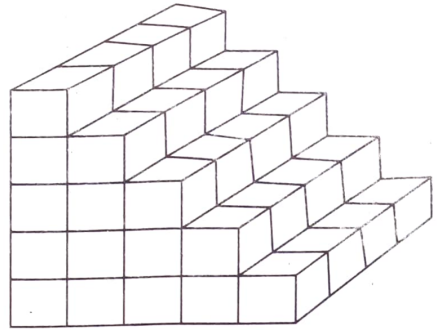
48. The table below shows distance in kilometres between towns P, Q, R and S.

P			
90	Q		
123	130	R	
210	150	100	S

A motorist travelled from town P to S via Q. If he took 3 hours. What was his average speed?

- A. 30km/h
- B. 50km/h
- C. 80km/h
- D. 70km/h

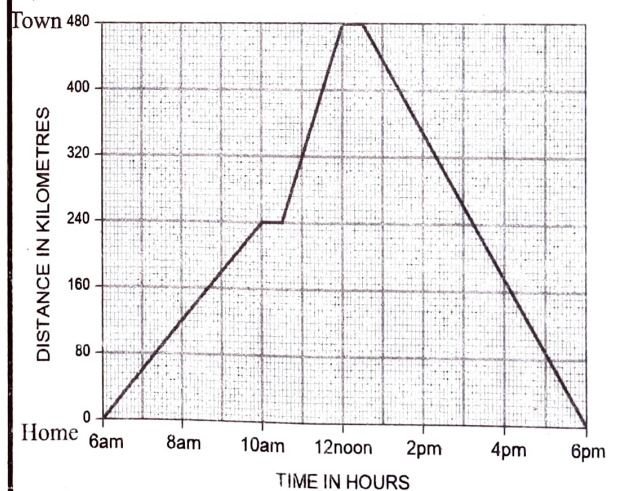
49. The stack below is made up of cubes



How many more cubes are needed to complete the stack?

- A. 60
- B. 100
- C. 30
- D. 40

50. The graph below shows a motorist's journey from home to town and back.



What was her average speed for the whole journey?

- A. 40km/h
- B. 160km/h
- C. 80km/h
- D. 120km/h