TARGETER KCPE THIRD MERIT
STANDARD EIGHT - YEAR 2022

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:

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

A. $2\frac{2}{3}$

B. $\frac{27}{128}$

C. $\frac{2}{3}$

D. $\frac{3}{8}$

The correct answer is **D.**

On the Answer sheet:

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 **31,** the box with letter **D** 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.,

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TURN OVER

1. Write 3428901.01 in words

A. Three hundred and forty two thousand eight thousand nine hundred and one and one hundredths.

B. Three million four hundred and twenty eight thousand nine hundred and one point zero one.

C. Three million four hundred and twenty eight thousand nine hundred and one and one hundredths.

D. Three million four hundred and twenty eight thousand nine hundred and one and one tenths.

2. What is the place value of digit 2 in the product of 2.36 and 1.7?

A. 0.002

B. Thousandths

C. Thousands

D. 0.02

3. What is the value of: $\frac{13+4^2+3^2-28\div 7\times 2}{3+3}$?

A. 6

B. 30

C. 36

D. 5

4. The following are prime factors of three numbers

(i) $2^3 \times 3$

(ii) $3^3 \times 2$

(iii) $4^2 \times 3$

What is the highest common divisors of the three numbers?

A. 6

B. 12

C. 3

D. 432

5. What is the value of $\frac{1}{9}\div\frac{1}{4}$ of $\frac{2}{3}+\left(\frac{2}{3}-\frac{1}{6}\right)$?

A. $\frac{4}{27}$

B. $1\frac{1}{6}$

C. $\frac{6}{7}$

D. $\frac{14}{27}$

6. A school has two streams from Grade 1 to std 8. There are 30 pupils in each class. At the beginning of first term, the pupils were given exercise books as follows:

Grade 1 - 3 .... 10books per pupil

Grade 4 - 6 .... 13books per pupil

Std. 7 - 8... 8 books per pupil

What was the total number of exercise books given?

A. 2550

B. 248

C. 5100

D. 6100

7. What is the value of $\frac{2.25\times 4.5\div 1.5\times 3.5}{0.15\times 0.07\times 9}$?

A. 0.25

B. 2.5

C. 0.025

D. 250

8. In a farm $\frac{1}{3}$ of the poultry are duck, $\frac{2}{5}$ are turkey and the rest are chicken. If the number of chicken is 240, how many more turkey than ducks are there?

A. 60

B. 300

C. 360

D. 660

9. After a 40% decrease in amount of water in a container, 1200litres of water remained. What is the capacity of the container when half full?

A. 3000L
B. 1500L
C. 600L
D. 2400L

10. What is the next number in the pattern 1, 3, 5, 9, 15, ____?

A. 21
B. 24
C. 25
D. 23

11. What is the value of $\sqrt{3\frac{6}{25}} \times \left(\frac{2}{3}\right)^2$?

A. $1\frac{4}{5}$

B. $\frac{4}{9}$

C. $1\frac{1}{5}$

D. $\frac{4}{5}$

12. Amina was born on 29th February year 2000. For how many times has she marked her birthday by now?

A. 5
B. 22
C. 11
D. 6

13. There were 60 people in a meeting. 0.15 were men, 0.35 were women and the rest were youths. How many youths were there?

A. 21
B. 9
C. 30
D. 39

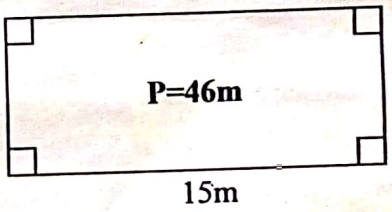
14. Which of the following sets of measurements will form a right angled triangle?

A. 8cm, 15cm, 19cm
B. 3cm, 4cm, 7cm
C. 6cm, 8cm, 12cm
D. 5cm, 12cm, 13cm

15. A cylindrical container has a diameter of 14cm and a height of 10cm. What is the area of a paper used to wrap it on the curved surface?

A. $154cm^2$
B. $440cm^2$
C. $594cm^2$
D. $748cm^2$

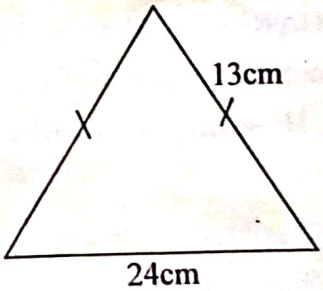
16. A rectangle has a perimeter of 46m. The length is 15m.



What is the width?

A. 30m
B. 16m
C. 8m
D. 3m

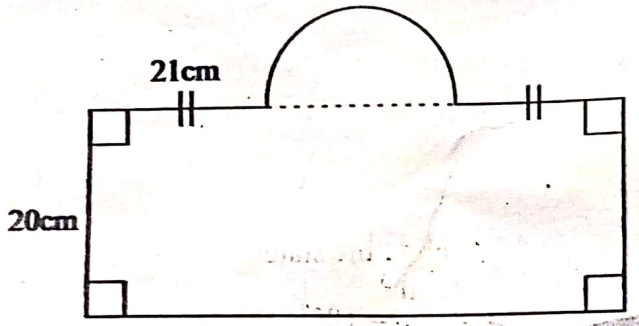
17. The base of an isosceles triangle is 24cm. The two equal sides are 13cm



What is the area of the triangle?

A. $30cm^2$
B. $60cm^2$
C. $156cm^2$
D. $15cm^2$

18. In the figure below the diameter of the semicircle is 14cm



What is the perimeter of the figure?

A. 96cm

B. 182cm

C. 140cm

D. 160cm

19. A watch loses 5 seconds every hour. It was set correct on Monday at 8.30am. What time was the clock showing on Tuesday the following day at 8.30am?

A. 8.28am

B. 8.32am

C. 8.30am

D. 9.50am

20. The distance from Kiptech town and Rioth town is 240km. A motorist travelled from Kiptech to Rioth and took 4hours. In the return journey he increased the speed by 20km/h. How long did the whole journey take?

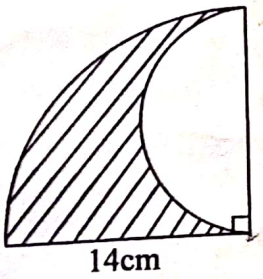
A. 8hours

B. 6hours

C. 7hours

D. 5hours.

21. The figure below is made up of a quarter circle and a semicircle



What is the area of the shaded part?

A. $77cm^2$

B. $154cm^2$

C. $38\frac{1}{2}cm^2$

D. $308cm^2$

22. The temperature of water was 15°C. It was heated for 20minutes gaining heat at a rate of 4°C per minute. What was its temperature below boiling point?

A. 95°C

B. 5°C

C. 80°C

D. 65°C

23. The area of a square plot is 2.25 hectares. The owner of the plot wanted to fence all round the plot placing posts at a regular interval of 5m. How many posts were required?

A. 600

B. 150

C. 120

D. 12

24. A rectangular container 4.5m long 2.0m wide and 0.5m high is full of water. What is its capacity in litres?

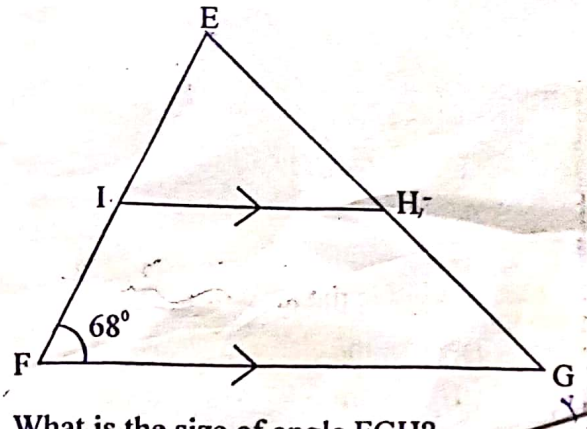
A. 4500L

B. 45L

C. 4.5L

D. 450L

25. In the figure below, line IH is parallel to line FG. Line EH = line IH and angle EFG = 68°.



What is the size of angle FGH?

A. 44°
B. 68°
C. 112°
D. 136°

26. The following are properties of quadrilaterals

(i) All sides are equal
(ii) Some angles are acute while others are obtuse
(iii) Diagonals bisect each other at right angles
(iv) All angles are 90°

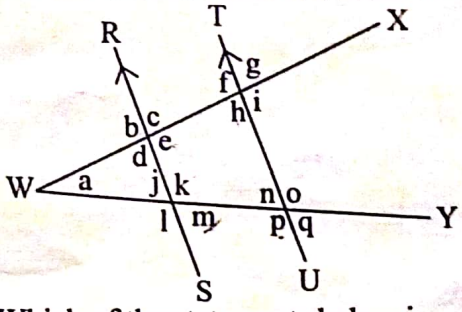
Which two properties are not true about both square and rhombus?

A. i, iii
B. ii, iv
C. iii, iv
D. ii, iii

27. Construct a triangle WXY such that WX = 8cm, XY = 6cm and angle WXY = 130°. What is the length of line WY?

A. 6.2cm
B. 12.7cm
C. 13.1cm
D. 7.1cm

28. Line RS is parallel to line TU. Line WX and WY are transversals that meet at W



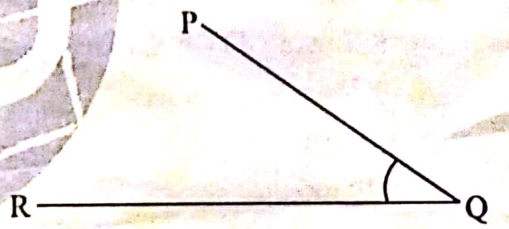
Which of the statements below is not true?

A. a + h + n = 180°
B. m + p = 180°
C. b = h
D. e = f

29. What is the difference between the sum of faces, vertices and the edges of a packet with a rectangular cross-section?

A. 14
B. 2
C. 12
D. 4

30. The figure below is drawn accurately



What is the size of the supplement of angle PQR?

A. 145°
B. 35°
C. 135°
D. 45°

31. Mary bought x mangoes and Tom three times as many mangoes. Oloo bought 10 less mangoes than Tom. How many mangoes did they buy altogether?

A. 4x -10
B. 7x - 10
C. 7x + 10
D. 5x - 10

32. What is the value of p in $2(p - \frac{1}{4}) = 11\frac{1}{2}$?

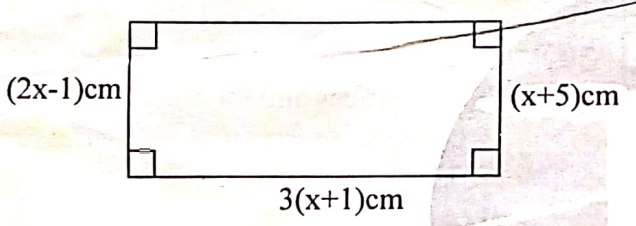
A. $5\frac{1}{2}$

B. $4\frac{1}{2}$

C. 6

D. 3

33. What is twice the value of x in?



A. 11

B. 6

C. 21

D. 12

34. What is $\frac{2(3t+2q)+2t+4q}{12t+8q}$ expressed in simplest form?

A. $\frac{2t+2q}{3t+2q}$

B. $\frac{8t+8q}{12t+8q}$

C. $\frac{2t+q}{3t+q}$

D. $\frac{t+2q}{3t+q}$

35. Given that a = 6, b = $\frac{1}{3}$ a and c = b + 2, what is the value of $\frac{2a+\frac{1}{2}(a+c)}{\frac{1}{2}}$?

A. 17

B. 34

C. $8\frac{1}{2}$

D. 12

36. The cash price of a radio is 20000. The hire purchase price of the same radio is 10% more than the cash price. Njoroge bought the radio on hire purchase term. He paid a deposit and the rest in 7 equal monthly instalments each two thousand shillings. How much deposit did he pay?

A. sh. 22000

B. sh. 14000

C. sh. 4000

D. sh. 8000

37. A trader sold an item for sh. 4800 making a loss of 20%. How much would the trader sold it to make a profit of 10%?

A. sh. 1800

B. sh. 6000

C. sh. 6600

D. sh. 600

38. Grace bought a dress after she was allowed a discount of sh. 300. if she paid sh. 1200 for the dress, what was the discount allowed as percentage?

A. 20%

B. 25%

C. 30%

D. 15%

39. Mama Ciru bought the following items from a supermarket:

2packets of unga @ sh. 140

$4\frac{1}{2}$ litres of milk @ sh. 60 per litre

2kg of rice for sh. 270

$1\frac{1}{2}$ litres of cooking oil at sh. 320 per litre

She paid for the items using 2 one thousand shillings notes. How much balance did she receive?

A. sh. 1300

B. sh. 700

C. sh. 1570

D. sh. 430

40. A sales agent is paid a basic salary of sh. 20000. He is also paid a commission of 5% on goods sold above sh. 40000. What was his total earning in a month he sold goods worth sh. 200000?

A. sh. 30000
B. sh. 32500
C. sh. 28000
D. sh. 12000

41. Patience deposited sh. 60000 in a bank that paid a simple interest at a rate of 8% per month. How much money was in her account after $\frac{1}{2}$ year?

A. sh. 28800
B. sh. 62400
C. sh. 2400
D. sh. 88800

42. The table below shows part of mobile phone money transfer tariff for registered and unregistered service users.

Transfer range	Transfer to registered user	Transfer to unregistered user
5001-7500	75	163
7500 - 10000	85	201
10001-15000	95	260
15001-20000	100	282

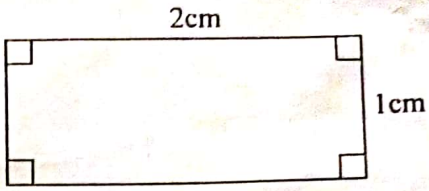
Samuel is a registered service user. He transferred sh. 9600 to a registered service user and sh. 15600 to unregistered service user. How much less would he have spent if both service users were registered?

A. sh. 367
B. sh. 182
C. sh. 185
D. sh. 298

43. What is 2:5 converted as percentage?

A. 40%
B. 60%
C. 0.4
D. $\frac{2}{5}$%

44. The figure below represent a rectangular piece of land drawn on a map using the scale 1:1000.



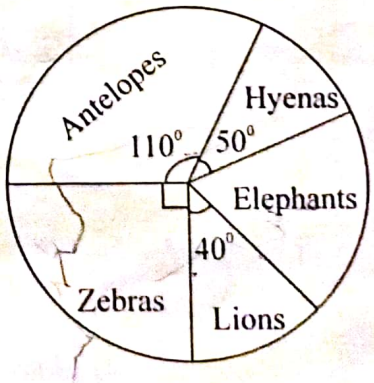
What is the actual area of the piece of land in ares?

A. 200
B. 20
C. 0.2
D. 2

45. Six men working at the same rate can complete a piece of work in 18 days. How many less days can the work take if the work is done by 9 men?

A. 6
B. 24
C. 12
D. 16

46. The pie chart below shows numbers of different types of wild animals seen by tourist in a certain national park.



If they saw 84 elephants, how many more antelopes than zebras did they see?

A. 132
B. 24
C. 108
D. 72

47. Ten pupils obtained a mean of 6.5 marks in a mathematics test marked out of ten. Nine of these pupils scored: 5, 6, 7, 8, 7, 5, 6, 8 and 7. What was the score of the tenth pupil?

A. 6
B. 7
C. 5
D. 8

48. The table below shows the distance in kilometres from Ali's home to school, police station, health centre and market

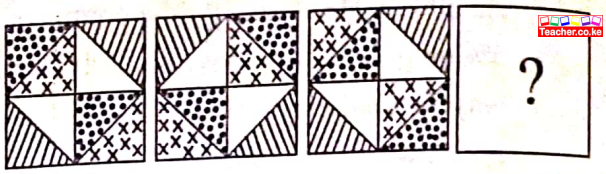
Home

2			School
4	3		Police station
6	5	4	Health centre
7	6	5	3 Market

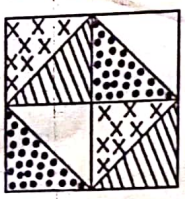
Ali travelled from home to health centre via school and then went home directly. What distance did he cover?

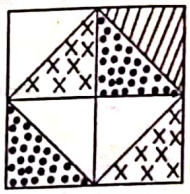
A. 7km
B. 6km
C. 14km
D. 13km

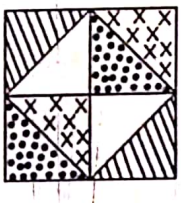
49. The figure below shows a pattern of shapes

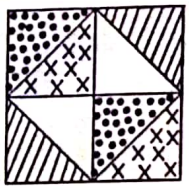


What is the next shape?

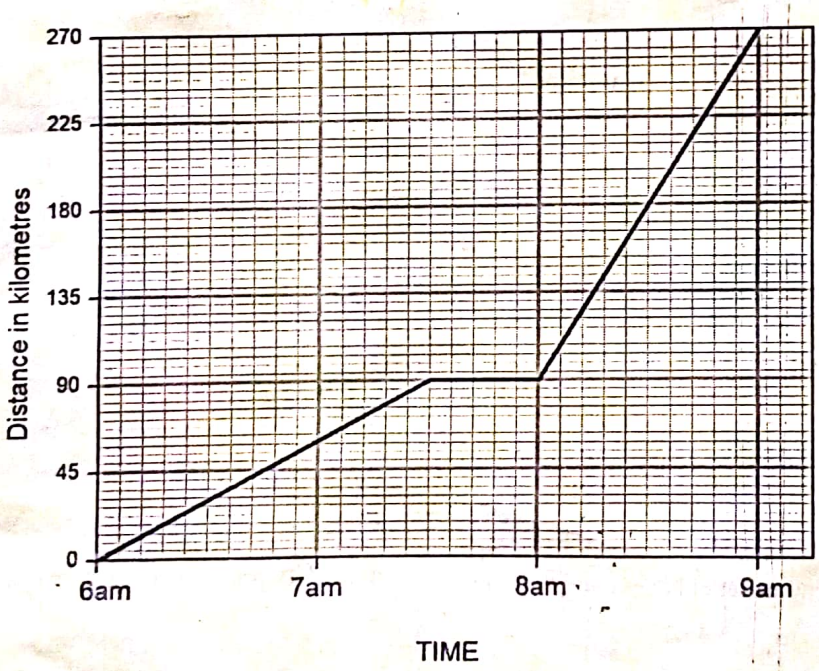
A.


B.


C.


D.


50. The graph below shows a motorist journey from home to town



What was his average speed for the whole journey in m/s?

A. 90m/s
B. 25m/s
C. $72m^2$
D. 20m/s