

KCPE NOVEMBER 2023 PREDICTION MASTER CYCLE 12
51600312

035713655



KENYA NATIONAL PREDICTION TESTS
KCPE



516003

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 this question booklet.

HOW TO USE THE ANSWER SHEET

4. Use only 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 the 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 and 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.

35. The following are factors of sixteen. Which one is the odd one out?

- A. 16
- B. 1
- C. 8
- D. 3

5. (A) (B) (C) (D) 15. (A) (B) (C) (D) 25. (A) (B) (C) (D) 35. (A) (B) (C) (D) 45. (A) (B) (C) (D)

On the answer sheet:

In the set of boxes numbered 35, the box with the 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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Contact Mr Machuki 0724333200/0795491185 for Marking Schemes or kenyaeducators.co.ke

1. Which one of the following is one million nine hundred and nine thousand two hundred and two written in figures?

- A. 1909202
- B. 1990202
- C. 1909220
- D. 1099202

2. What is 79.9876 rounded off correct to two decimal places?

- A. 80.00
- B. 79.98
- C. 79.99
- D. 79.988

3. Peter visited his grandmother from 19th January to 24th March 2016 the same year. How many nights did she spend with the grandmother?

- A. 63
- B. 64
- C. 62
- D. 65

4. How many groups of thousands are there in the value of digit 8 in the number 1984326

- A. 80000
- B. 80
- C. 8000
- D. 800

5. What is the value of $3\frac{3}{4} \div \frac{3}{8} \times \frac{5}{6} + \frac{1}{72}$?

- A. $1\frac{43}{64}$
- B. $4\frac{2}{3}$
- C. $8\frac{1}{3}$
- D. $8\frac{25}{72}$

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

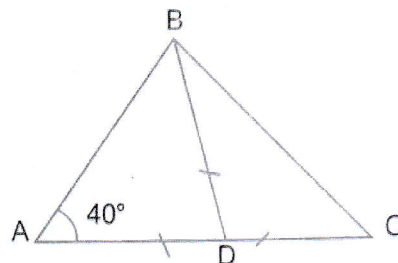
1, 1, 2, 3, 5, 8, 13, _____

- A. 15
- B. 19
- C. 21
- D. 20

7. Find the difference between the L.C.M and G.C.D of 18, 24 and 36.

- A. 72
- B. 66
- C. 78
- D. 84

8. In the figure below, line AD=BD=CD. Angle BAC = 40°. What is the value of Angle ABC?



- A. 50°
- B. 40°
- C. 100°
- D. 90°

9. Which one of the following measurements can be used to form a right angled triangle?

- A. 45cm, 60cm, 75cm
- B. 9cm, 12cm, 18cm
- C. 15cm, 21cm, 24cm
- D. 21cm, 36cm, 45cm

10. Joshua went to a shop and bought the following items.

-2kg of sugar @sh.80

-2-2kg packets of maize flour @ sh. 100

-3 $\frac{1}{2}$ kg of cooking oil for sh.540

-3 match boxes at sh.40

If he paid using 3-five hundred shilling notes, what balance did he get?

- A. sh. 480
- B. sh. 280
- C. sh. 1220
- D. sh. 1020

11. Amina paid sh.1190 for an electric jug after receiving a discount of 15%. How much would he had paid if she was not allowed any discount?

- A. sh.1011.50
- B. sh.1400
- C. sh.210
- D. sh. 1221.50

12. What is the value of $\frac{12(39 - 18) + 3 \times 4}{12}$?

- A. 21
- B. 34
- C. 8
- D. 22

13. A farmer harvested 1800 bags of maize in 2013. This was a 20% increase from 2012. How many bags did he harvest in 2012?

- A. 2160
- B. 1500
- C. 1440
- D. 2250

14. What is $\frac{3}{4}$, $\frac{7}{9}$, $\frac{3}{5}$ and $\frac{3}{8}$ arranged from the largest to the smallest?

- A. $\frac{3}{8}$, $\frac{3}{5}$, $\frac{3}{4}$, $\frac{7}{9}$
- B. $\frac{3}{4}$, $\frac{7}{9}$, $\frac{3}{5}$, $\frac{3}{8}$
- C. $\frac{7}{9}$, $\frac{3}{4}$, $\frac{3}{5}$, $\frac{3}{8}$
- D. $\frac{3}{4}$, $\frac{7}{9}$, $\frac{3}{8}$, $\frac{3}{5}$

15. A map was drawn using a scale of 1:200000. What length on the map will be used to represent 16km?

- A. 32cm
- B. 4cm
- C. 80cm
- D. 8cm

16. What is the value of x in the equation.

$$\frac{x}{2} + \frac{x+1}{3} = 7$$

- A. $8\frac{2}{5}$
- B. 8
- C. 4
- D. 6

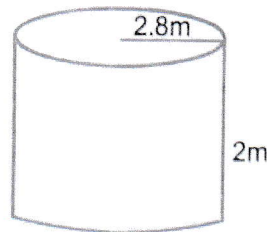
17. Peter bought two trays of egg at sh.120 per tray. On his way home, 10 eggs broke. He sold the remaining eggs at sh 6 each. What percentage profit did he make if one tray contains 30 eggs?

- A. 25%
- B. 20%
- C. 60%
- D. 50%

18. Construct a triangle PQR such that line QR=8cm, angle PQR 45° and angle RPQ=55°. What is the length of line PQ?

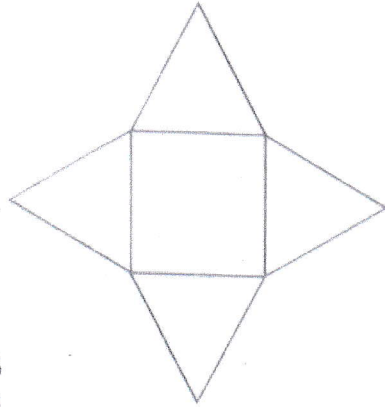
- A. 6.8cm
- B. 8cm
- C. 9.6cm
- D. 9cm

19. A cylindrical tank below has a radius of 2.8m and a height of 2m. What is its capacity in litres when half full?



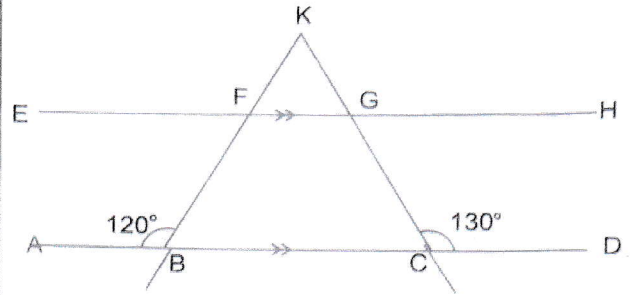
- A. 49.28litres
- B. 24.64L
- C. 49280L
- D. 24640L

20. What is the product of the edges and the faces of solid formed by the net below?



- A. 65
B. 25
C. 13
D. 40
21. Peter bought oranges, bananas and mangoes. The number of bananas bought was twice that of mangoes. The number of oranges were eight less than that of mangoes. If he bought y mangoes, which of the following expressions will represent the total number of fruits bought?
- A. $4y + 8$
B. $4y - 8$
C. $2\frac{1}{2}y - 8$
D. $2\frac{1}{2}y + 8$
22. A child slept at 2125h and woke up $8\frac{3}{4}$ hrs later. At what time in am/pm clock system did he wake up?
- A. 12.40pm
B. 6.10pm
C. 12.40am
D. 6.10am
23. Atieno and Arwa shared some money. If Atieno got $\frac{3}{7}$ of the total amount, what was the sharing ration between Arwa and Atieno respectively?
- A. 3: 4
B. 4:3
C. 4:7
D. 3:7

24. In the figure below, line **EFH** is parallel to line **ABD**. Angle **ABF**= 120° and angle **GCD**= 130° . What is the value of Angle **BKC**?



- A. 30°
B. 80°
C. 50°
D. 70°
25. An open cylindrical tank has a diameter of 2.8m and a height of 2m. It was painted on all sides. Find the area painted.
- A. $17.6m^2$
B. $29.92m^2$
C. $12.32m^2$
D. $23.76m^2$
26. A saleslady earns a basic salary of kshs.3500. She is also paid a 3% commission on value of goods sold above kshs. 10000. In one month, she was paid a total of ksh 6500. What was the value of goods sold that month?
- A. sh. 110000
B. sh. 90000
C. sh. 80000
D. sh. 100000
27. An empty lorry weighs 4.5 tonnes. It was loaded with bags of maize. Each bag of maize weighted 90kg and the weight of loaded lorry became 7.2 tonnes. How many bags were loaded?
- A. 27
B. 80
C. 30
D. 50

28. Electric poles were fixed on both sides of a road 4.5km away. If the poles were fixed at intervals of 90m, how many poles were needed?

- A. 50
- B. 102
- C. 51
- D. 101

29. What is the value of $\frac{\sqrt{a^2} \times (3b - c)}{c}$

When $a=b+1$, $b=4$, $c=b-1$

- A. 15
- B. 60
- C. 12
- D. 17

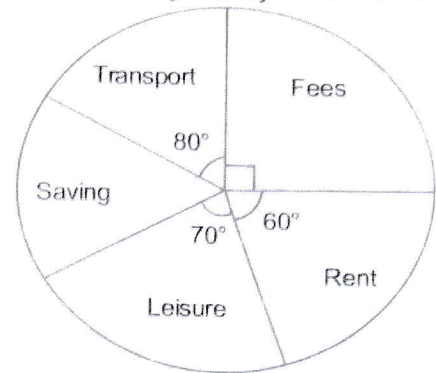
30. The marked price of a sofa set is sh. 24000. The hire purchase price is 20% more than marked price. Juma bought the sofa set on hire purchase paying a deposit of sh. 18000 and the rest in 9 equal monthly instalments. How much did he pay as each instalment?

- A. sh. 1200
- B. sh. 10800
- C. sh. 28800
- D. sh. 4800

31. A farmer fenced his rectangular piece of land measuring 45m by 25m. If he spaced his post at an interval of 10m apart, how many poles did he use?

- A. 7 poles
- B. 15 poles
- C. 8 poles
- D. 14 poles

32. The pie chart below shows how Mwangi spent his monthly salary of ksh 24000.



How much more did he spend on fees than saving?

- A. sh. 6000
- B. sh. 2000
- C. sh. 10000
- D. sh. 4000

33. A tank contains water to the level of $\frac{2}{3}$. 120 litres were discharged and the new level of water was $\frac{1}{4}$. What is the capacity of the tank when full?

- A. 288L
- B. 600L
- C. 180L
- D. 144L

34. Ten men working at the same rate can finish a job in 8 days. How much longer will it take 5 men to finish the same job?

- A. 16
- B. 6
- C. 8
- D. 11

35. What is the value of

$$\frac{0.35 \times 7.2 - 1.5 + 3.2}{0.05} ?$$

- A. 8.44
- B. 0.844
- C. 844
- D. 84.4

36. Peter deposited ksh.60000 in a bank that paid simple interest at the rate of 5% pa. He withdrew all the money plus the interest after eight months. How much did he withdraw?
 A. sh. 2000
 B. sh. 84000
 C. sh. 24000
 D. sh. 62000

37. A family uses 3 - 500ml packets of milk each day. How many litres of milk did they use in the months of July and August?
 A. 90litres
 B. 18litres
 C. 93litres
 D. 174.5litres

38. The mean of 8 numbers is 45. Seven of the numbers are 48, 52, 36, 40, 30, 58 and 34. What is the median of the eight numbers?
 A. 62
 B. 48
 C. 44
 D. 40

39. The table below shows the bus timetable from Nairobi to Eldoret.

Station	Arrival	Departure
Nairobi	————	8.30am
Limuru	9.30am	9.45am
Naivasha	10.35am	11.50am
Nakuru	1.50pm	2.00pm
Eldoret	3.15pm	————

How long did the bus take from Limuru to Eldoret?

- A. 6hrs 30min
 B. 5hrs 45min
 C. 5hr 30min
 D. 6hr 15 min

40. Solve the inequality.

$$3p + 10 < 7p - 6$$

- A. $p < 4$
 B. $4 = p$
 C. $p < 1\frac{1}{2}$
 D. $p > 4$

41. A bicycle wheel has a radius of 14cm. It covered a distance of 0.88km. How many turns did it make?

- A. 100
 B. 1000
 C. 10000
 D. 500

42. Three pupils Furaha, Gitahi and Komen contributed a total of sh. 4000 for a party. Furaha contributed sh. 30 more than Gitahi when Komen contributed three times as much as Furaha. If Furaha contributed sh. y show an equation representing Furaha's contribution.

- A. $5y + 30 = 4000$
 B. $5y - 30 = 4000$
 C. $2\frac{1}{3}y - 30 = 4000$
 D. $2\frac{1}{3}y + 30 = 4000$

43. Achieng and Atieno shared money in the ratio of 3:4. Atieno received sh.200 more than Achieng. How much did Atieno receive?

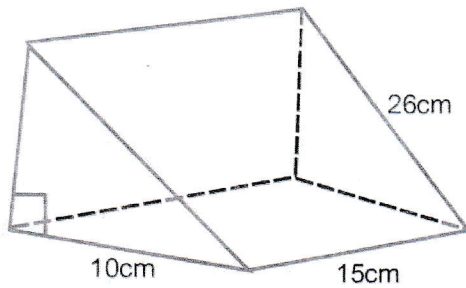
- A. sh.800
 B. sh.600
 C. sh.2400
 D. sh.400

44. Construct triangle **STR** in which **ST=TR = RS =8cm**. Draw a circle that touches the points **T, S** and **R**. What is the measure of the diameter?

- A. 4.7cm
 B. 2.2cm
 C. 4.4cm
 D. 9.2cm

45. A motorist left town **A** at 8.15am for town **B** a distance of 330km. He covered the first 112km in $1\frac{1}{3}$ hours and stopped for 20 minutes to fuel. He continued with the journey arriving in town **B** at 11:55a.m. What was the average speed for the whole journey?
- A. 99km/hr
 B. 90km/hr
 C. 104km/hr
 D. 84km/hr

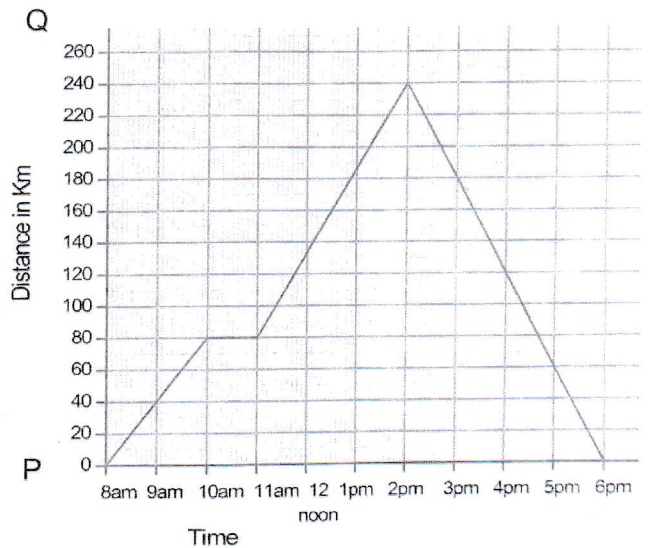
46. Find the surface area of the solid below.



- A. 1140cm²
 B. 1800cm²
 C. 3900cm²
 D. 3600cm²
47. The length of one of the parallel lines of a trapezium is 6cm and the perpendicular height is 4cm. If the area of the trapezium is 72cm², what is the length of the other parallel line?
- A. $7\frac{1}{2}$ cm
 B. 24cm
 C. 20cm
 D. 30cm
48. What is the volume of a closed cylinder whose diameter is 28cm and a height of 5cm in cm³? (Take $\pi = \frac{22}{7}$)
- A. 440cm³
 B. 308000cm³
 C. 4400cm³
 D. 3080cm³

49. The following are properties about a certain quadrilateral.
- (i) All sides are equal.
 (ii) Some angles are equal.
 (iii) Diagonals are not equal and bisect each other at 90°.
 (iv) Diagonals bisect the base angles.
- The quadrilateral described above is likely to be
- A. square
 B. rectangle
 C. rhombus
 D. parallelogram

50. The graph below shows how a motorist travelled from town **P** to **Q** and back.



- What was the average speed for the whole journey?
- A. 40km/hr
 B. 60km/hr
 C. 48km/hr
 D. 80km/hr