

KCPE NOVEMBER 2023 PREDICTION MASTER CYCLE 14 51600314

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.



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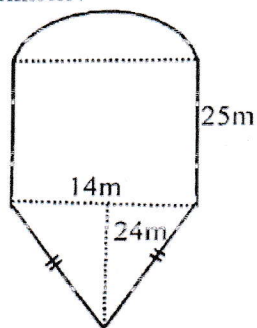
This question paper consists of 8 printed pages.

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Contact Mr Machuki 0724333200/0795491185 for Marking Schemes or kenyaeducators.co.ke

1. What is **3303030.03** written in words?
 - A. Three million three hundred and three thousand and thirty and three hundredths.
 - B. Three million three hundred and thirty thousand and thirty and three hundredths.
 - C. Three million three hundred and three thousand and thirty and thirty hundredths.
 - D. Thirty million three hundred and three thousand and thirty and three hundredths.
2. Round off **14.9238** and **16.7445** to the nearest hundredths and find their sum.
 - A. 30.65
 - B. 31.67
 - C. 31.66
 - D. 31.65
3. What is the value of;
 $46 - 14 \div 21 \times 3 + 15 \div 5$?
 - A. 48
 - B. 47
 - C. 41
 - D. 43
4. Amina goes for clinic after every 6 days. Maria goes after every 8 days while Ngonyi goes after every 12 days. If all of them went for the clinic on 17th February 2020, on which day did they go for clinic together again?
 - A. 11th Feb
 - B. 11th March
 - C. 12th March
 - D. 13th March
5. The area of a square plot is 5184m^2 . It was fenced using five strands of wire. What was the total length of wire used?
 - A. 288m
 - B. 1200m
 - C. 1400m
 - D. 1440m
6. The diagram below represented a grass lawn. What is its perimeter?



- A. 100m
- B. 122m
- C. 144m
- D. 168m

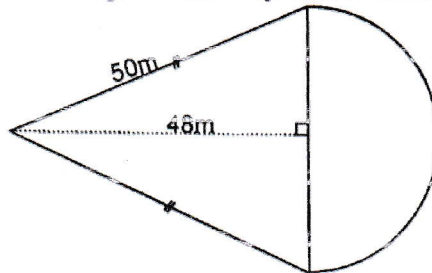
7. By how much is the LCM of 20, 25 and 30 greater than the GCD of 90, 120 and 150?
- A. 270
B. 330
C. 30
D. 10
8. A pick-up carried 20 bags of maize flour each weighing 90kg. Half of the flour was packed into 2kg packets. Half of the remainder into 1kg packets and the rest into $\frac{1}{2}$ kg packets. How many packets were obtained altogether?
- A. 2700
B. 1350
C. 900
D. 1800
9. Keli is paid a daily wage of sh. 350. He is also paid a commission of sh.12 for every sh. 200 collected above sh. 5000. How much did he earn on a day that he collected sh. 20000?
- A. Sh. 900
B. Sh. 1200
C. Sh. 1250
D. Sh. 1550
10. What is the value of;
 $\frac{4.5 \div 0.3 + 1.2 \times 5.0}{1.2 \times 4.0 + 2.0 \times 1.1}$?
- A. 0.03
B. 0.3
C. 30
D. 3
11. On a map whose scale is 1:50000, a maize field is represented by a rectangle measuring 1cm by $\frac{1}{2}$ cm. What is the actual area of the maize field in hectares?
- A. 12.5ha
B. 125ha
C. 1250ha
D. 1.25ha

12. What is the value of x in;

$$\frac{2x - 2}{4} + \frac{x + 1}{2} = 7 ?$$

- A. 3
B. 5
C. 6
D. 7

13. The diagram below represents Mutia's farm.



What is the area of the farm?

- A. 980m^2
B. 672m^2
C. 1386m^2
D. 826m^2

14. A train left Mombasa on Monday at 11:45pm. It took 18 hours 30 minutes to reach Kisumu. On which day and time did it reach Kisumu?
- A. 6:16am Tuesday
B. 6:15 pm Tuesday
C. 6:15 am Monday
D. 6:15 pm Monday

15. The table below shows the number of pupils absent in a class of 54 pupils in one week.

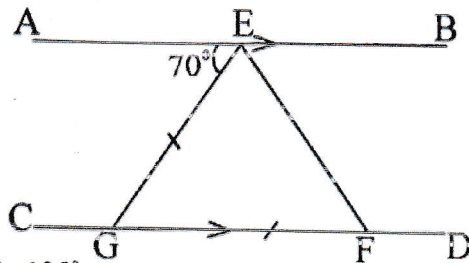
Days	Mon	Tue	Wed	Thur	Frid
No. of boys	1	2	1	2	___
No. of Girls	___	3	1	2	3

How many pupils were present in the whole week?

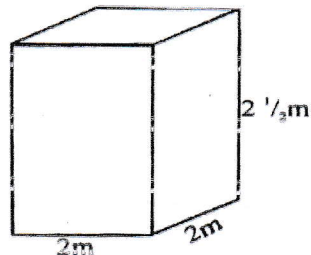
- A. 215
B. 255
C. 270
D. 231
16. A bicycle wheel made 500 revolutions and covered a distance of 880 metres. What is the radius of the wheel?
- A. 14cm
B. 42cm
C. 56cm
D. 28cm

17. Mulumba employed 12 men to construct a house in 12 days. After working for 6 days, he employed 6 more men. How long did it take to construct the house?
- A. 9 days
B. 4 days
C. 8 days
D. 10 days.

18. In the diagram below, line AB is parallel to CD . Line GE and GF are equal. Angle $AEG = 70^\circ$. What is the value of angle EFD ?



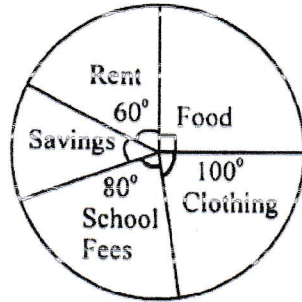
- A. 125°
B. 55°
C. 110°
D. 135°
19. In a farm, the ratio of cows to goats is 3:5. The ratio of goats to sheep is 5:4. If there are 4 more goats than sheep, how many animals are in that farm?
- A. 24
B. 60
C. 48
D. 72
20. Jeff and Randy bought similar shirts at the same price. Jeff sold his shirt making a profit of 20% while Randy made a loss of 20%. If Jeff got sh. 320 more than what Randy got, how much had they paid for the two shirts?
- A. Sh. 800
B. Sh. 1600
C. Sh. 850
D. Sh. 1700
21. The tank below was three quarter full of water.



A family uses 3, 25 litre containers of water daily. How long will the water take the family if it uses it constantly?

- A. 100 days
B. 75 days
C. 50 days
D. 30 days.

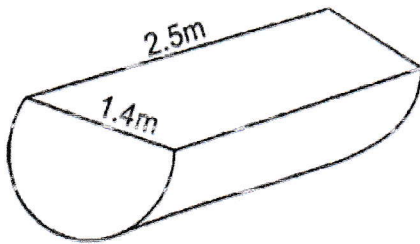
22. The pie chart below represents Kinuthia's expenditure of his salary of sh. 72000.



If he spends sh. 4000 more on clothing than school fees, how much does he save?

- A. Sh. 12000
 B. Sh. 8000
 C. Sh. 6000
 D. Sh. 2000
23. Timothy spent 0.25 of his day at work, 0.3 doing domestic chores and 0.5 of the remainder visiting friends. He slept the rest of the day. What percentage of his day did he rest?
- A. 2.25%
 B. 22.5%
 C. 4.45%
 D. 45%
24. Onyongo's salary increases by 5% each year. If he earns sh. 12000, how much will he earn after one year?
- A. Sh. 13200
 B. Sh. 14000
 C. Sh. 13230
 D. Sh. 12600
25. If $a = 3$, $b = 2a$ and $c = a + b$, what is the value of;
- $$\frac{a^2 b}{c} + \frac{b^2 - c}{a} ?$$
- A. 15
 B. 18
 C. 12
 D. 21
26. A square plot has an area of 625m^2 . Coffee seedlings are planted at regular interval of 4m round the plot. How many seedlings are planted altogether?
- A. 26
 B. 25
 C. 20
 D. 24

27. A hospital was supplied with 12 - 5L tins of syrup medicine. Each patient was given 250ml of the syrup. How many patients were treated altogether?
- A. 15
B. 120
C. 240
D. 480
28. Kimanathi deposited sh. 30000 in a bank that pay simple interest at the rate of 8% p.a . How much was in his account after $1\frac{1}{2}$ years?
- A. Sh. 3696
B. Sh. 33696
C. Sh. 34992
D. Sh. 33600
29. The trough below was painted both inside and outside .



- What was the total area painted?
- A. 6.16m^2
B. 9.42m^2
C. 11.88m^2
D. 14.08m^2
30. A matatu covered a distance of 225km in 5 hours. What was its average speed in m/s?
- A. $12\frac{1}{2}$ m/s
B. 45m/s
C. $7\frac{1}{2}$ m/s
D. 15m/s
31. Construct triangle XYZ where line $XY = 7.5\text{cm}$, line $YZ = XZ = 6\text{cm}$. Draw a circle touching its vertices. What is its radius?
- A. 3.6cm
B. 1.8cm
C. 3.9cm
D. 7.8cm

32. The heights of 8 seedlings was recorded as follows: 1.29m, 1.31m, 1.42m, 1.63m, 1.44m, 1.39m, 1.57m and 1.07m. What is the average height of the seedlings?
- A. 1.4775m
B. 1.39m
C. 1.456m
D. 1.4625m

33. What is the simplified form of the expression;

$$\frac{4}{9}(18x + 9y) + \frac{2}{7}(14x - 14y) ?$$

- A. $12x + 8y$
B. $12x - 8y$
C. $12x - y$
D. $12x$
34. Wandeni sold 20% of the meat in his butchery on Monday, 35% on Tuesday, 15% on Wednesday and 12% on Thursday. He sold the rest on Friday. If he sold 14kg on Friday, how many more kilograms were sold on Tuesday than Monday?
- A. 15kg
B. 30kg
C. $11\frac{2}{3}$ kg
D. 12kg
35. A plot in the shape of a trapezium has an area of 12hectares. One of the parallel sides is 210 metres while the shortest distance between the parallel sides is 400 metres. What is the length of the other parallel side?
- A. 290m
B. 410m
C. 390m
D. 450m
36. Arrange the following fractions in descending order;

$$\frac{2}{3}, \frac{4}{9}, \frac{7}{12} \text{ and } \frac{13}{18}$$

A. $\frac{13}{18}, \frac{7}{12}, \frac{2}{3}, \frac{4}{9}$

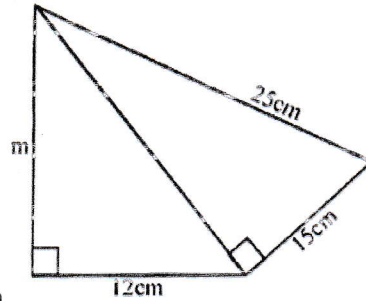
B. $\frac{13}{18}, \frac{2}{3}, \frac{7}{12}, \frac{4}{9}$

C. $\frac{4}{9}, \frac{2}{3}, \frac{7}{12}, \frac{13}{18}$

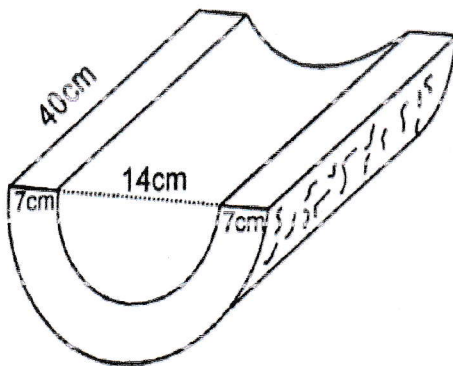
D. $\frac{4}{9}, \frac{7}{12}, \frac{2}{3}, \frac{13}{18}$

37. A trader paid sh. 6600 for a jacket after a discount of 12%. How much less would he have paid had he been given discount of 15%?
 A. Sh. 637
 B. Sh. 225
 C. Sh. 750
 D. Sh. 250

38. What is the length of the line marked m in the figure below?



- A. 16cm
 B. 20cm
 C. 24cm
 D. 14cm
39. A lorry travelling at a speed of $12\frac{1}{2}$ m/s took 3hrs to travel from town X to town Y. What is the distance between the two towns?
 A. $37\frac{1}{2}$ km
 B. 90km
 C. 120km
 D. 135km
40. What is the volume of the piece of wood below?



- A. 12320cm^3
 B. 9772cm^3
 C. 9240cm^3
 D. 6480cm^3

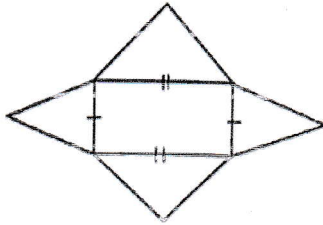
41. Ondieki bought the following items from a shop.
- 2 litres of milk @ sh. 60.
 - $1\frac{1}{2}$ kg sugar @ sh. 130
 - A bar of soap @ sh. 115.
 - A 2kg packet wheat flour @ sh. 180
 - 4 rolls of tissue paper for sh. 60
- How much balance did he get from sh. 1000 note?
- A. Sh. 670
B. Sh. 330
C. Sh. 850
D. Sh. 150

42. What is the value of;

$$2\frac{1}{4} + 1\frac{1}{2} \div 2\frac{2}{3} - \frac{1}{4} \text{ of } 3\frac{1}{3}?$$

- A. $1\frac{43}{48}$
B. $1\frac{23}{24}$
C. $1\frac{47}{48}$
D. $2\frac{13}{48}$
43. The cost of a pair of trousers is sh. t. The cost of a shirt $\frac{1}{3}$ the cost of the pair of trousers while the cost of a pair of shorts is sh. 50 less than that of a shirt. A trader bought 2 pairs of trousers, two pairs of shorts and 3 shirts. How much did he pay?
- A. Sh. $(3\frac{2}{3}t + 40)$
B. Sh. $(3\frac{2}{3}t + 100)$
C. Sh. $(3\frac{2}{3}t - 40)$
D. Sh. $(3\frac{2}{3}t - 100)$
44. Kimaru had 72 rabbits. During the December holiday, he sold 18 of them. What was the ratio decrease in the number of rabbits?
- A. 3:4
B. 4:3
C. 3:2
D. 2:3

45. The net below was foiled to form a solid.



What solid did it form?

- A. Rectangular prism
 B. Rectangular pyramid
 C. Triangular pyramid
 D. Triangular prism.
46. Draw a parallelogram $MNPQ$ where line $MN = 6.5\text{cm}$, $NP = 4.7\text{cm}$ and angle $MNP = 65^\circ$. Drop a perpendicular from point P to meet line MN at R . Measure line NR .
- A. 4.2cm
 B. 4.5cm
 C. 3.6cm
 D. 2.0cm
47. Which is the smallest number that can be added to **49675** to make it divisible by 11?
- A. 1
 B. 0
 C. 2
 D. 4
48. The marked price of a gas cooker is sh. 9000. If you buy it on cash you get a 10% discount. The hire purchase price includes a deposit of sh.6400 and the rest in 8 equal monthly installments of sh. 700. How much more does one pay on hire purchase than cash?
- A. Sh. 5600
 B. Sh. 3400
 C. Sh. 3000
 D. Sh. 3900

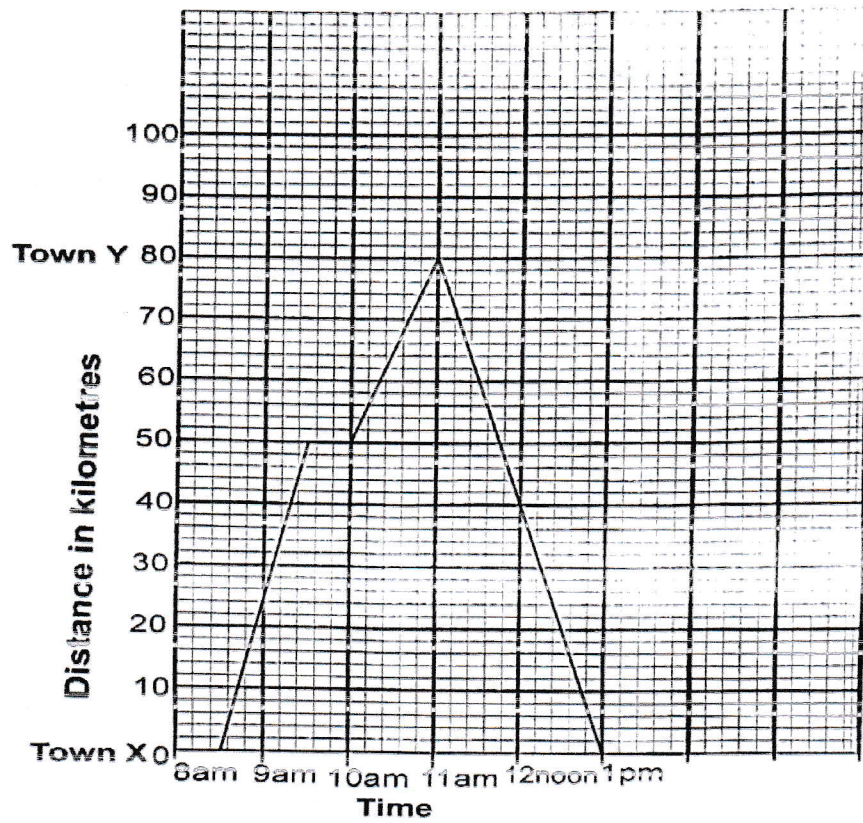
49. The table below shows the postal rates of ordinary money orders.

Value of order(Sh)	Commission	
	(Sh)	(cts)
Up to 500	45	00
501 - 1000	96	00
1001 to 2000	140	00
2001 to 5000	215	00
5001 to 10000	295	00
10001 to 20000	350	00
20001 to 50000	425	00

Karanja paid school fees for his two children using two money orders of sh.7500 and sh. 12500. How much would he have saved had he bought one money order?

- A. Sh. 645
 B. Sh. 425
 C. Sh. 295
 D. Sh. 340

50. The graph below shows Wanza's journey from town X to Y and back.



What was his average speed for the last part of the journey towards town Y?

- A. 30km/hr
- B. 40km/hr
- C. 20km/hr
- D. 35km/hr