

KCPE NOVEMBER 2023 PREDICTION MASTER CYCLE 15
51600315

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.

906503

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

1. What is 2096508 written in words?
 - A. Two million ninety six thousand five hundred and eight
 - B. Twenty million ninety six thousand five hundred and eight
 - C. Two million nine hundred and sixty five thousand five hundred and eight
 - D. Twenty million ninety six thousand and fifty eight

2. What is 768.995 rounded off to the nearest hundredths?
 - A. 768.00
 - B. 768.90
 - C. 769.00
 - D. 769.90

3. What is the difference in value between the total values of digits 8 and 4 in the number 68549?
 - A. 8400
 - B. 8040
 - C. 8000
 - D. 7960

4. What is the value of $50 - 5(12 - 7) + 9 \times 2 \div 6$?
 - A. 34
 - B. 28
 - C. 22
 - D. 16

5. What is the value of x in $\frac{2(x+1)}{3} - 4 = 0$?
 - A. 1
 - B. 5
 - C. $5\frac{1}{2}$
 - D. $6\frac{1}{2}$

6. Which of the following decimals represents 4:5?
 - A. 0.45
 - B. 4.9
 - C. 0.8
 - D. 5.9

7. Raymond bought the following items from a shop

4 packets of milk @ sh 60

3kg of onions for sh 180

$2\frac{1}{2}$ kg of tomatoes @sh 60 per kg

4 rolls of tissue paper @ sh 35.

If he paid with sh 1000 note, how much balance did he receive?

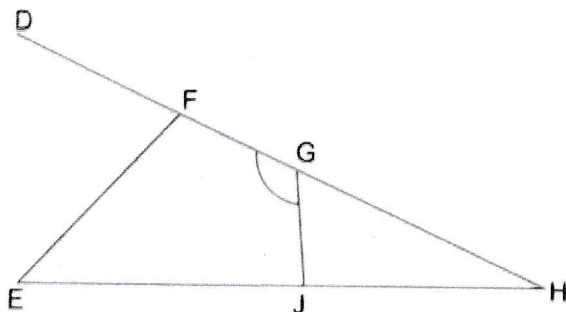
 - A. Sh 710
 - B. Sh 665
 - C. Sh 335
 - D. Sh 290

8. Which one of the following statements is correct?
 - A. $\frac{2}{7} < 0.28$
 - B. $\frac{2}{7} = 0.28$
 - C. $0.28 < \frac{2}{7}$
 - D. $\frac{2}{7} > 0.28$

9. The area of a square cardboard is 1024cm^2 . What is the perimeter of the cardboard?
 - A. 4096cm
 - B. 256cm
 - C. 144cm
 - D. 128cm

10. What is the next number in the pattern
3, 16, 33, 52, 75, _____?
A. 99
B. 100
C. 102
D. 104
11. A meeting started at 8.45am. The meeting ended after 6 hours 55 minutes. At what time did the meeting end?
A. 2.40pm
B. 3.40pm
C. 3.00pm
D. 3.00am
12. Rabala bought 240 fruits at sh 15 each. She paid sh 400 for transport to the market. She sold the fruits and made 50% profit. What is the selling price for each fruit?
A. Sh 16.70
B. Sh 22.50
C. Sh 24.00
D. Sh 25.00

13. Below are lines meeting at different points.



What is the measure of angle FGJ?

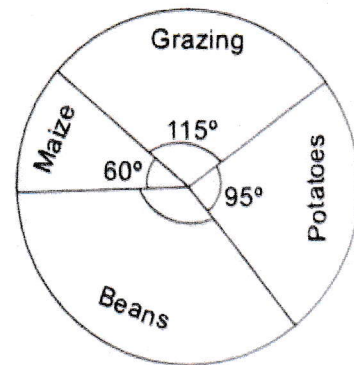
- A. 122°
B. 118°
C. 98°
D. 62°

14. A community function was attended by 269 men, 1081 women and 4036 children. How many more children than adults were at the function?
A. 1350
B. 2686
C. 2955
D. 5386

15. What is the value of $\frac{1\frac{1}{2} - \frac{1}{4} \times 1\frac{1}{3}}{1\frac{1}{3} + \frac{1}{6} + \frac{1}{2}}$?

- A. $1\frac{17}{18}$
B. 1
C. $\frac{7}{18}$
D. $\frac{7}{10}$

16. The pie chart below represents how a farmer used his 12 hectare farm.



How many hectares did he use for growing maize than beans?

- A. 1
B. 2
C. 3
D. 5

17. Three bells ring at intervals of 15 minutes, 30 minutes and 45 minutes respectively. If the bells rung together at 9.45am, at what time would the bells ring together again?
- A. 1.30pm
B. 10.15am
C. 11.15pm
D. 11.15am
18. A milk factory processed 2500litres of milk. 0.78 of the milk was sold to supermarkets while 0.3 of the remainder was donated to nearby schools. The remaining amount of milk was given to the factory staff. How many litres of milk was given to the staff?
- A. 1950
B. 550
C. 385
D. 165
19. A section of a road measuring 2km is represented by a length of 10cm. Which one of the following is the scale of the map?
- A. 1:200
B. 1:2000
C. 1:20000
D. 1:200000
20. Omondi made an open cylindrical container with metal sheets. The internal diameter of the container is 42cm and the height is 60cm. He painted all the internal surfaces. What is the total area painted? (Take $\pi = \frac{22}{7}$)
- A. 83160cm²
B. 10692cm²
C. 9306cm²
D. 7920cm²
21. In a school the number of workers is w . The number of learners is eight times the number of teachers. The number of workers is nine less than the number of teachers. How many people are in the school?
- A. $10w+81$
B. $10w-63$
C. $10w+18$
D. $10w-81$
22. Nzau is paid a basic salary of sh 36000. For any sales above sh 150000, he is paid a commission of 5%. In one month he sold goods worth sh 480000. How much altogether did he earn that month?
- A. Sh 60000
B. Sh 52500
C. Sh 31500
D. Sh 16500
23. Ali had 8 one thousand shilling notes, 7 five hundred shilling notes and 15 two hundred shilling notes. He changed all the money into five hundred shilling notes. How many notes did he get?
- A. 29
B. 60
C. 290
D. 145
24. A playing field is rectangular in shape. The length is 96cm and each of the diagonals is 100m long. What is the width of the playing field?
- A. 28m
B. 56m
C. 98m
D. 196m

25. A supermarket uses 8 bottles of hand sanitizer everyday to sanitize the customers. Each bottle contains 250ml. How many litres of the sanitizer did the supermarket use in the month of February 2020?

- A. 56
- B. 58
- C. 60
- D. 62

26. Dina made a profit of sh 9600 in the month of December. This was a 20% increase from November. How much profit did she make in November?

- A. Sh 7600
- B. Sh 8000
- C. Sh 10560
- D. Sh 11500

27. Letoo had one tonne of sugar. He repacked the sugar into 500g packets. How many packets did he obtain?

- A. 200
- B. 2000
- C. 20000
- D. 200000

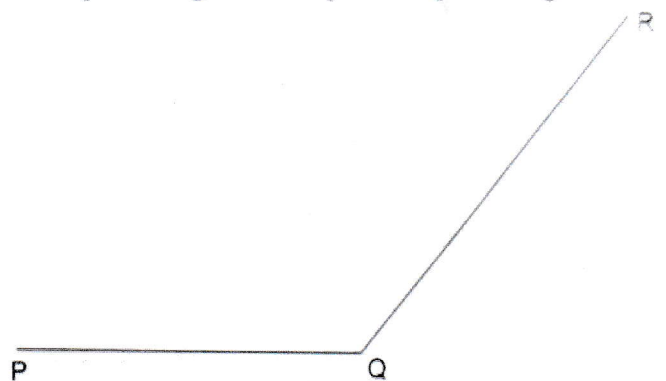
28. Njeri used $\frac{1}{6}$ of her salary on transport, $\frac{1}{3}$ on food, $\frac{1}{4}$ of the remainder on rent and saved the rest. If she saved sh 6000, how much did she spend on both transport and food?

- A. Sh 3000
- B. Sh 5000
- C. Sh 6000
- D. Sh 8000

29. The cash price of a table is sh 40800. The hire purchase price is 20% more than the cash price. Mutua bought it in hire purchase terms. He paid a deposit and the balance in 18 equal monthly installments of sh 1450 per month. How much deposit did he pay?

- A. Sh 489600
- B. Sh 22860
- C. Sh 26100
- D. Sh 14700

30. Lines PQ and QR are two sides of a parallelogram. Complete the parallelogram



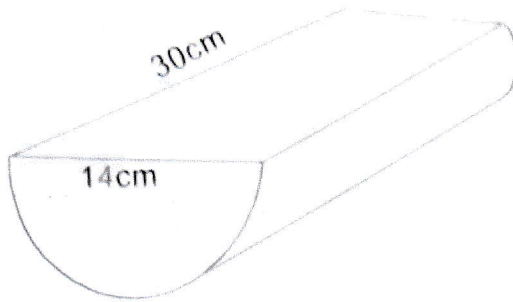
What is the length of the shorter diagonal?

- A. 10.1cm
- B. 9.6cm
- C. 4.8cm
- D. 5.1cm

31. Twelve people can complete a construction in 24 days. If 4 of the people failed to turn up, how many more days would it take the remaining people to complete the construction?

- A. 36
- B. 16
- C. 12
- D. 8

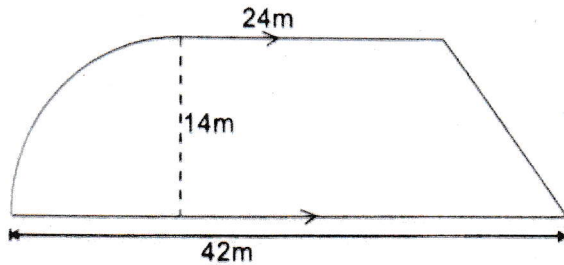
32. The figure below represents a half cylindrical solid. The diameter is 14cm and it is 30cm long.



What is the volume of the solid? (Take $\pi = \frac{22}{7}$)

- A. 660cm^3
- B. 1234cm^3
- C. 2310cm^3
- D. 4620cm^3

33. The figure below represents a garden. It is in the shape of a quarter circle of radius 14m and a trapezium.



What is the area of the garden? (Take $\pi = \frac{22}{7}$)

- A. 770m^2
- B. 518m^2
- C. 500.5m^2
- D. 462m^2

34. What is the value of $\frac{12.0 - 0.6 \text{ of } 0.4 + 3.24}{0.3}$?

- A. 50
- B. 26
- C. 5
- D. 2.6

35. The table below represents a bus timetable for Isiolo to Mombasa route.

Town	Isiolo	Manyuki	Nyeri	Nairobi	Mtito Karat	Voi	Mombasa
Arrival time		12:00pm	2:00pm	4:00pm	8:00pm	2:30am	5:00am
Departure time	10:30am	12:30pm	2:15pm	7:30pm	1:00am	3:15am	

How long is the bus expected to travel from Nyeri to Voi?

- A. 14hrs 46mins
- B. 11hrs 45mins
- C. 12hrs 30mins
- D. 12hrs 15mins

36. The perimeter of a rectangular farm is 442m. The length of the farm is 128m. What is the width of the farm?

- A. 93m
- B. 110m
- C. 157m
- D. 186m

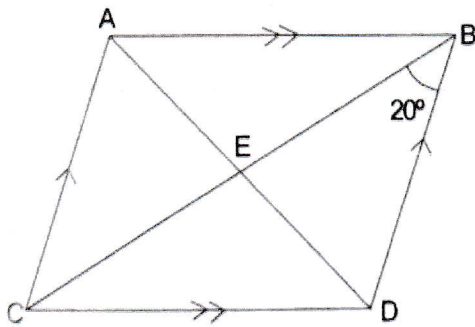
37. Serut borrowed sh 80000 from a financial institution that charged a simple interest at the rate of 21% per annum. How much did he pay back after 2 years?

- A. Sh 33600
- B. Sh 37128
- C. Sh 113600
- D. Sh 117128

38. What is the value of p in $\frac{2}{3}(2p + 4) + 6 = 10$?

- A. 5
- B. 4
- C. 2
- D. 1

39. Amugure drove from Nairobi to Kisumu a distance of 336km at a speed of 84km/h. On his way back, he drove at a speed of 56km/h. What was his average speed for the whole journey?
- A. 24km/h
B. 33.6km/h
C. 67.2km/h
D. 70km/h
40. A tank of water is 3.5m long, 2.5m wide and 3m high. How many litres of water can the tank hold when full of water?
- A. 26.25
B. 262.5
C. 2625
D. 26250
41. The diagram below is a rhombus. BC and AD are the diagonals. Angle EBD = 20°.



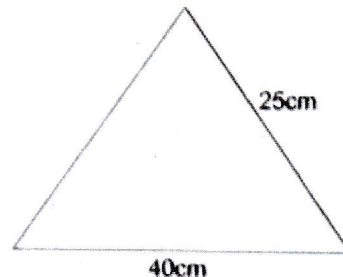
What is the size of angle BAC?

- A. 40°
B. 70°
C. 110°
D. 140°
42. In a class of 40 pupils, the mean score in a test was 65 marks. The mean score for the last 30 pupils was 58. What is the total score for the first 10 pupils?
- A. 86
B. 860
C. 1740
D. 2600

43. The following are properties of a certain quadrilateral.
- i) Diagonals do not bisect at right angles
ii) Two pairs of parallel lines
iii) Opposite sides are equal and parallel
iv) All angles are equal
v) Diagonals are equal
- Which quadrilateral has the above properties?
- A. Rectangle
B. Parallelogram
C. Rhombus
D. Square

44. Munguti paid sh 5980 for a mobile phone after getting a discount of 8%. What was the marked price of the phone?
- A. Sh 6500
B. Sh 6458.40
C. Sh 6099.60
D. Sh 5501.60

45. The perimeter of the isosceles triangle below is 90cm. Two of the sides are 25cm and 40cm.



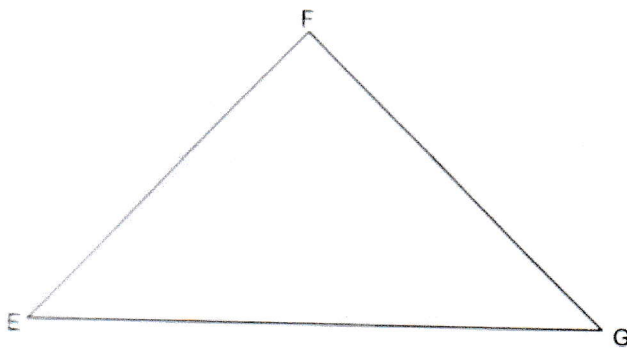
What is the area of the triangle?

- A. 150cm²
B. 300cm²
C. 500cm²
D. 600cm²

46. A 33-seater bus and 11 seater matatu were to transport 319 people to a function. If the matatu made an extra trip than the bus. How many people did the matatu transport?

A. 231
 B. 88
 C. 77
 D. 23

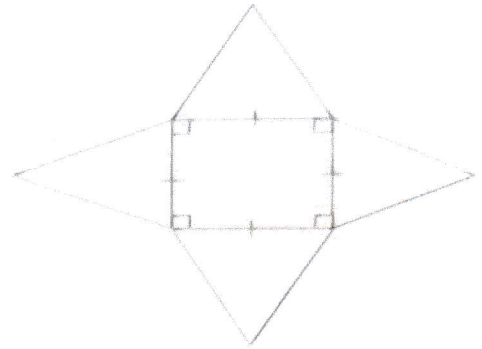
47. On triangle EFG below, construct a circle that touches the edges.



What is the diameter of the circle?

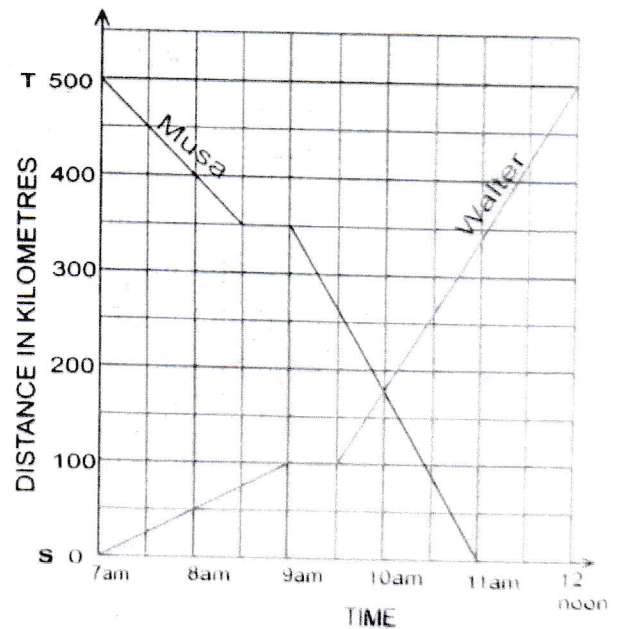
- A. 1.7cm
 B. 3.4cm
 C. 4.2cm
 D. 8.4cm
48. Nafula earns sh x . This is four times Muturi's salary. Kiptoo earns sh 600 more than half the total of what both Nafula and Muturi earn. If they all earn a total of sh 4000, which one of the following equations can be used to find salary of Kiptoo?
- A. $15x + 4800 = 32000$
 B. $10x + 1800 = 4000$
 C. $5x + 1800 = 2400$
 D. $15x + 4800 = 6000$

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



Which one of the following can be formed from the net above?

- A. Square pyramid
 B. Square prism
 C. Triangular pyramid
 D. Triangular prism
50. The graph below represents the journey's of Musa and Walter driving in opposite directions.



How far from town S was Walter when Musa stopped resting?

- A. 100km
 B. 150km
 C. 350km
 D. 400km