

BRAINWAVE K.C.P.E EXAMINATION PANEL



STANDARD EIGHT YEAR 2022

003

BRAINWAVE
PUBLISHERS

— MATHEMATICS —

Time : 2 HOURS

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 paper.

HOW TO USE THE ANSWER SHEET.

4. Use an ordinary pencil only.
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 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. Chose 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:

24. Work out: square root of $\sqrt{81}$
- A. 9
 - B. 4.5
 - C. 21
 - D. 3

The correct answer is **D(3)**

On the answer sheet:

4. [A] [B] [C] [D] 14. [A] [B] [C] [D] 24. [A] [B] [C] [D] 34. [A] [B] [C] [D]

In the set boxes numbered 24, the box with letter **D** printed in it is marked.

11. Your dark line Must be within the box. Make your line as dark as possible.
12. For each question **Only One** box is to be marked in each set of four boxes.

Candidates should check the question papers to ensure that all questions are printed.

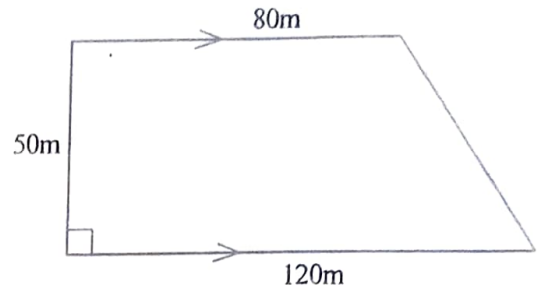
1. Which one of the following numbers is five million, three hundred and three thousand, four hundred and four in symbols?
- A. 5330404
 B. 5303404
 C. 5303440
 D. 533404
2. By how many times is the total value of digit 8 more than the total value of digit 4 in the number 328749?
- A. 8040
 B. 7960
 C. 200
 D. 8000
3. What is 493.9785 rounded off to the nearest tenths?
- A. 393.98
 B. 393.9
 C. 494
 D. 494.0
4. What is the value of:
- $$\frac{1.44 \times 0.36}{0.009}$$
- A. 576
 B. 57.6
 C. 5.76
 D. 5760
5. What is the difference between the L.C.M and G.C.D of 12, 15 and 24?
- A. 117
 B. 123
 C. 57
 D. 5760
6. What is the value of $\left(2\frac{1}{2}\right)^2 - \sqrt{1\frac{7}{9}}$
- A. $\frac{1}{6}$
 B. $3\frac{11}{12}$
 C. $\frac{11}{12}$
 D. $4\frac{11}{12}$
7. What is the next number in the pattern?
 184, 120, 71, 35, _____
- A. 21
 B. 45
 C. 10
 D. 17
8. What is the value of $\frac{8}{15}$ of $\left(\frac{1}{2} - \frac{1}{8}\right) + \frac{3}{4} \div \frac{5}{6}$
- A. $2\frac{1}{10}$
 B. $\frac{9}{10}$
 C. $1\frac{1}{10}$
 D. $1\frac{11}{10}$

9. What is the value of x in

$$x + \frac{3x-4}{4} = 6$$

- A. 7
B. 4
C. 6
D. 5
10. The price of an item was sh.12000. It was increased by 20% and later decreased by 20% what is its new price?
A. 7200
B. 14400
C. 12000
D. 11520
11. A meeting started at 10.30pm. It took 8hrs 45min. At what time in 24 clock system did it end.
A. 0710hr
B. 1815hr
C. 0815hr
D. 1915hr
12. A trader had 1.2 tonnes of sugar. He packed a third of it into 500g packets and the rest into 250g packet. How many packets did he obtain in total?
A. 1600
B. 4000
C. 2400
D. 3200

13. The diagram below shows a plot of land. What is its area in hectares?



- A. 40
B. 0.5
C. 4000
D. 5000
14. A rectangle has a diagonal of 20cm and a width of 12cm. What is half its area?
A. 96cm^2
B. 192cm^2
C. 120cm^2
D. 140cm^2
15. Ali paid sh.3700 for a radio after getting a discount of $7\frac{1}{2}\%$. How much more would he have paid if he had been given a discount of 5%?
A. Sh.100
B. Sh.3800
C. Sh.200
D. Sh.400
16. A cylindrical tank of radius 2.1 metres and height 3m is full of water. How many litres of water does it hold?
A. 415.8
B. 19800
C. 41580
D. 10395

17. Mwangi's salary increased from sh.25000 to sh.30000. In what ratio did it increase?
- A. 5:6
 B. 5:11
 C. 11:5
 D. 6:5

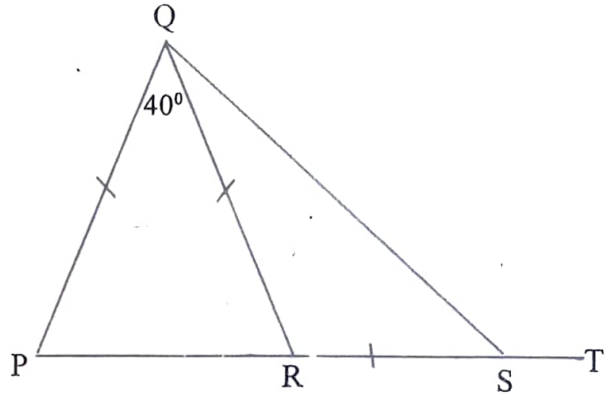
18. How many faces(F), vertices(V) and edges(E) are there in a closed cuboid?

	F	V	E
A.	5	12	8
B.	8	6	12
C.	6	12	8
D.	6	8	12

19. Mburu planted 0.12 of his land with maize, 0.25 with beans, 0.3 with fruits and the rest with potatoes. If he had 4.8 hectares. How many hectares were planted with potatoes?
- A. 0.33
 B. 0.67
 C. 0.8
 D. 0.792

20. The mean of six numbers is $9\frac{5}{6}$. Five of the numbers are 6, 1, 7, 8 and 15. What is the median of the numbers?
- A. 11
 B. 7.5
 C. 9.5
 D. 10

21. In the figure below, $PQ = QR = RS$. Angle $PQR = 40^\circ$.



What is the size of the angle QST?

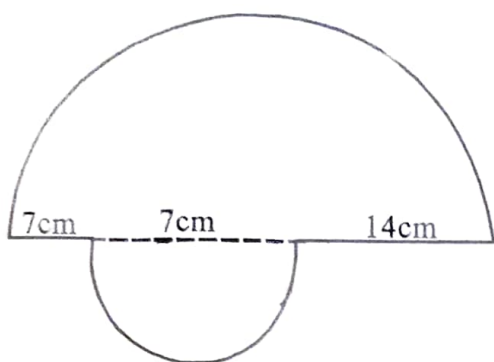
- A. 145°
 B. 130°
 C. 110°
 D. 160°

22. The temperature of frozen water is 15°C below the freezing point. It was heated until the temperature became 70°C . What was the rise in temperature?
- A. 55°C
 B. 85°C
 C. 60°C
 D. 115°C
23. A motorist left home at 10.05am and travelled to Nairobi, a distance of 225km. He travelled at an average speed of 90km/h. At what time did he reach Nairobi?
- A. 12.30pm
 B. 12.50am
 C. 2.30pm
 D. 12.50pm

24. What is the value of $\frac{0.8 + 0.4 \div 0.5 - 0.12}{0.04}$

- A. 1.48
 B. 57
 C. 19
 D. 37

25. What is the perimeter of the figure below?



- A. 55cm
 B. 83cm
 C. 61cm
 D. 76cm
26. Twelve men can do a piece of work in 15 days. How many more men are needed if the work is to be done in 10 days?
 A. 18
 B. 8
 C. 6
 D. 3
27. Construct triangle UVW such that $VW=7\text{cm}$, $UV=8\text{cm}$ and $UW=6\text{cm}$. draw a circle which passes through U , V and W . What is the radius of the circle?
 A. 2.0cm
 B. 3.9cm
 C. 4.2cm
 D. 8.3cm
28. Joan sold milk from 8th January to 15th March 2020. How many days altogether did he sell milk?
 A. 157 days
 B. 58 days
 C. 60 days
 D. 59 days

29. A saleslady earns salary of sh.18,000 plus a commission of 4% on goods sold above sh.80,000. In one month she sold goods worth sh.500,000. How much did she earn in total?
 A. Sh.16,800
 B. Sh.34,800
 C. Sh.38,000
 D. Sh.20,000

30. What is the simplest form of the expression below?

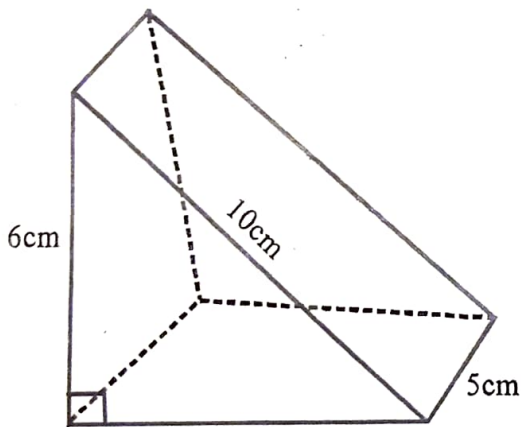
$$\frac{3}{7}(21m+42n) + \frac{5}{6}(18m-18n)$$

- A. $6m + 3n$
 B. $24m + 3n$
 C. $24m - 3n$
 D. $24m + 33n$
31. The cash price of a radio is sh. 8,000. Muinde bought it on hire purchase terms. The amount he paid was 255 more than the cash price. He paid a deposit of sh.1000 and the remaining in 20 equal monthly instalments. How much was each instalments?
 A. Sh.250
 B. Sh.350
 C. Sh.450
 D. Sh.500
32. A certain quadrilateral has the properties below.
 (i) All sides are equal
 (ii) Diagonals are not equal
 (iii) Some angles are equal
 (iv) Diagonals bisect at right angles
 Which quadrilateral had the above properties?
 A. Rectangle
 B. Rhombus
 C. Square
 D. Parallelogram

33. A floor measures 18m by 15m. A carpet was laid on the floor leaving a margin of 2m all the way round. What is the area of the carpet?
- A. 154m^2
 B. 116m^2
 C. 270m^2
 D. 128m^2

34. A trader bought 3 trays of eggs each holding 30 eggs. He paid sh.200 for each tray. During transportation, 10 eggs broke. He sold the remaining at sh.10 per egg. What was his percentage profit?
- A. $33\frac{1}{3}\%$
 B. 30%
 C. 25%
 D. 50%

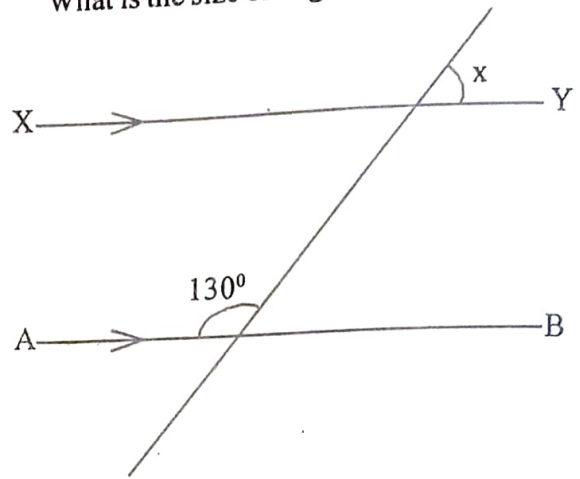
35. The figure below represents a prism.



What is its volume?

- A. 150cm^3
 B. 168cm^3
 C. 120cm^3
 D. 240cm^3

36. In the figure below, line XY is parallel to AB. What is the size of angle marked x



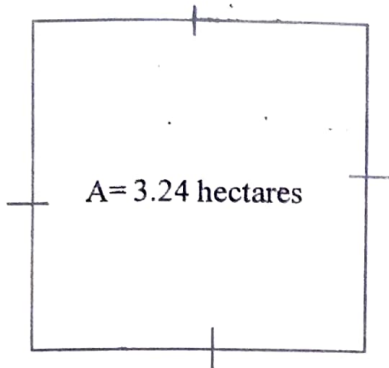
- A. 130°
 B. 50°
 C. 65°
 D. 25°

37. A section of a road 15km long is represented by a map of a length 0.3cm. What is the scale used?
- A. 1:5000
 B. 1:50000
 C. 1:500000
 D. 1:5000000

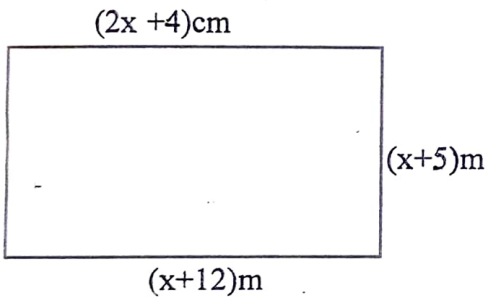
38. December twentieth 2007 was on Thursday. What day of the week was fifteen April 2008?
- A. Monday
 B. Tuesday
 C. Wednesday
 D. Thursday

39. What is $2\frac{1}{4}\%$ expressed as a ratio in its simplified form?
- A. 9:4
 B. 4:9
 C. 9:400
 D. 400:9

40. The diagram below shows a piece of land with an area of 3.24 hectares. It was fenced using 4 strands of wire what was the length of the wire used?



- A. 2880m
 B. 720m
 C. 14.4m
 D. 14440m
41. The figure below is a rectangle. Find the perimeter of the rectangle.



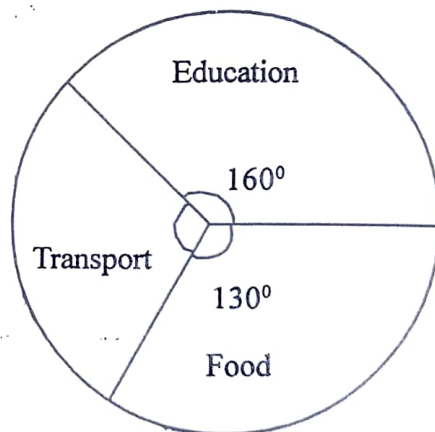
- A. 66
 B. 124
 C. 260
 D. 33
42. A man borrowed sh.72000 from a bank that charged simple interest at a rate of 12% p.a. He paid all the money after 18months. How much did he pay?
- A. 155520
 B. 12960
 C. 84960
 D. 94000

43. A class has 34 pupils. Each pupils took two 2dl packets, of milk, How many litres of milk did they drink altogether?
- A. 136
 B. 13.6
 C. 68
 D. 6.8

44. In a class the ratio of boys to girls is 4:5. If there are 6 more girls than boys, how many pupils are in the class altogether?
- A. 36
 B. 44
 C. 27
 D. 54

45. What is the place value of digit 7 after working; $260.375 \div 5$
- A. Tenths
 B. Thousandths
 C. Hundredths
 D. Ones

46. The pie chart below shows how Ali spends his income.



If his salary was sh.18000, how much more did he spend on education than on transport?

- A. Sh.11500
 B. Sh.8000
 C. Sh.4500
 D. Sh.3500

47. Mwangi is 4 years older than Najala. If Mwangi is y years, what will be their total age in 10 years time?

- A. $2y + 16$
- B. $2y - 4$
- C. $2y + 6$
- D. $2y + 24$

48. The table below shows sizes of shoes sold by a trader in a week.

Shoe in size	4	5	6	7	8
No. sold	3	9	2	12	10

What was the modal size?

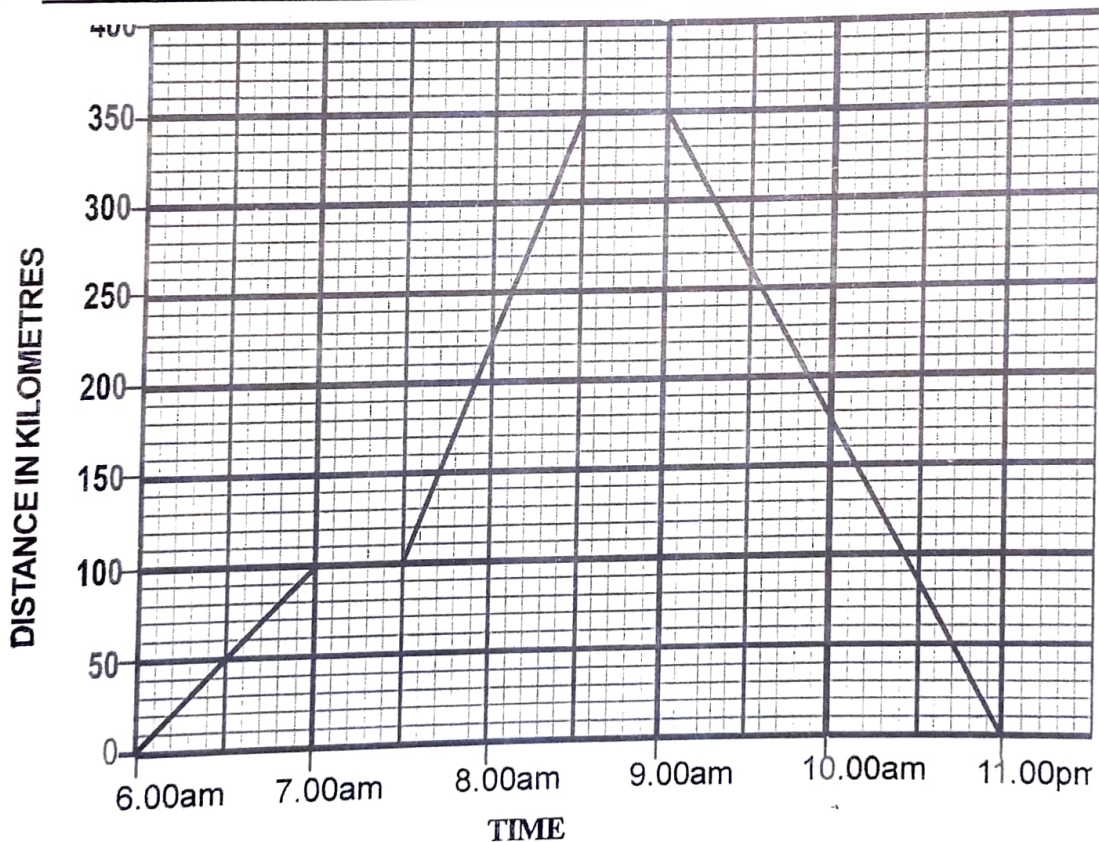
- A. 12
- B. 7
- C. 4
- D. 8

49. Draw a parallelogram PQRS in which $QR=PS= 7.5\text{cm}$, $RS=4.5\text{cm}$ and angle $PQR=70^\circ$. Draw the diagonals to meet at N.

What is the length of line PN?

- A. 7.4cm
- B. 3.7cm
- C. 4.9cm
- D. 9.8cm

50. The graph below shows a motorists journey.



What was the motorist's average speed for the whole journey?

- A. 70 km/h
- B. 110 km/h
- C. 76 km/h
- D. 140 km/h