SHARP FOCUS SERIES
STANDARD EIGHT - YEAR 2023

S003

MATHEMATICS   READ THESE INSTRUCTIONS CAREFULLY

Time: 2hrs

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 (the School Code Number and the 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:

12. What is the greatest common divisor of 120 and 270

   A. 120
   B. 30
   C. 1080
   D. 10

   The correct answer is **B**.

On the Answer sheet:

12. [A] [B] [C] [D]   **13.** [A] [B] [C] [D]   **14.** [A] [B] [C] [D]   **15.** [A] [B] [C] [D]

In the set of boxes number 12, the box with letter B 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 6 printed pages.

TURN OVER

1. What is two milllion thirty six thousand four hundred and thirty less one million one hundred thousand written in figure?
   A. 2036430
   B. 1036430
   C. 1936430
   D. 936430

2. Round off 42.37985 to the nearest thousandths.
   A. 42.379
   B. 42.38
   C. 42.380
   D. 42.379

3. What is the value of;-
   $10 - 66 \div 22 \times \frac{1}{6}$ of $36 + 11$?
   A. 3
   B. 6
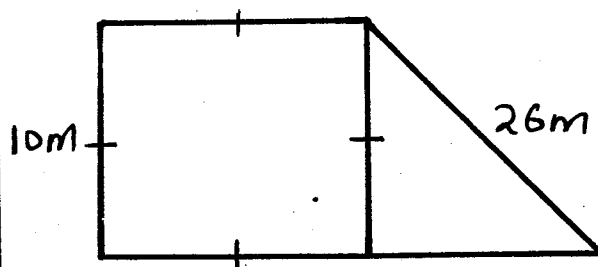   C. 19
   D. 12

4. Solve the value of **y** in the equation.
   $$\frac{(y-2)}{3} + \frac{(y+4)}{3} = 10$$

   A. 10
   B. 14
   C. 4
   D. 2

5. A tractor wheel covered a distance of 6.6km after making 10000 revolutions. Calculate the diameter of the wheel. $\pi = \frac{22}{7}$
   A. 2.1cm
   B. 210cm
   C. 21cm
   D. 2100cm

6. Calculate the area of the figure drawn below.

   A. 220m²
   B. 240m²
   C. 100m²
   D. 170m²

7. The marked price of a radio is Sh 8800. A customer received a discount of 5%. How much did he pay for it?
   A. Sh 440
   B. Sh 8360
   C. Sh 9240
   D. Sh 8400

8. A section of a river whose actual length is 4km is represented by a line measuring 5cm. What is the scale used in the map?
   A. 1:800000
   B. 1:125000
   C. 1:80000
   D. 1:1250000

9. A man deposited Sh 40000. After 4 years he withdrew Sh 48000 which included the simple interest earned. At what rate percent per annum was the bank giving the interest?
   A. 10%
   B. 5%
   C. 4%
   D. 25%

10. In the figure below line BE is parallel to line CD. BC is a perpendicular to l ines BE and CD. ABE is an isosceles triangle.
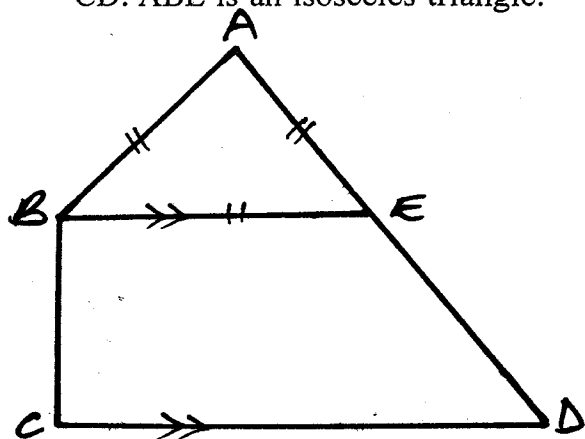
What is the size of angle CDE?

A. 60°

B. 90°

C. 120°

D. 50°

11. The surface area of an open cube is 125cm². Calculate its volume.

A. 15625cm³

B. 125cm³

C. 625cm³

D. 100cm³

12. 6 workers can complete a certain project in 8 days. How long would 9 workers take to complete the same project?

A. 5½

B. 1

C. 12

D. 5$\frac{1}{3}$

13. The first session of a teacher's Competence Based Curriculum workshop took 2½ hours. The second session took 1¾ hours. There was a 40 minute lunch break between the first and the second session. If the first session started at 9.30am at what time did the second session end?

A. 2.25pm

B. 1.25pm

C. 1.45pm

D. 12.45pm

14. A trader bought an item for Sh 880. He later sold it making a profit of 5%. At what price did he sell it?

A. Sh 924

B. Sh 920

C. Sh 836

D. Sh 840

15. The table below shows departure and arrival time of a bus travelling from town **T** to town **Z**. Use it to answer the question that follows.

| T	Departure	10.00am
V	Arrival	11.30am
	Departure	11.45am
W	Arrival	1.30pm
	Departure	1.50pm
X	Arrival	3.00pm
	Departure	3.05pm
Y	Arrival	4.10pm
	Departure	4.50pm
Z	Arrival	5.00pm

At which station did the bus stop the longest time?

A. T

B. V

C. W

D. Y

16. Arrange the following from the smallest to the largest. $\frac{9}{10}$, $\frac{8}{11}$, $\frac{5}{6}$, $\frac{7}{9}$

A. $\frac{9}{10}$, $\frac{5}{6}$, $\frac{7}{9}$, $\frac{8}{11}$

B. $\frac{9}{10}$, $\frac{5}{6}$, $\frac{8}{11}$, $\frac{7}{9}$

C. $\frac{7}{9}$, $\frac{8}{11}$, $\frac{5}{6}$, $\frac{9}{10}$.

D. $\frac{8}{11}$, $\frac{7}{9}$, $\frac{5}{6}$, $\frac{9}{10}$

17. Work out the value of;-

$$3 - 2\tfrac{1}{3} \text{ of } \tfrac{2}{14} \times 4 \div 2\tfrac{2}{3}$$

A. 1

B. 1½

C. 3½

D. 2½

18. Calculate the area of the shaded part in the figure below. $\pi = \tfrac{22}{7}$
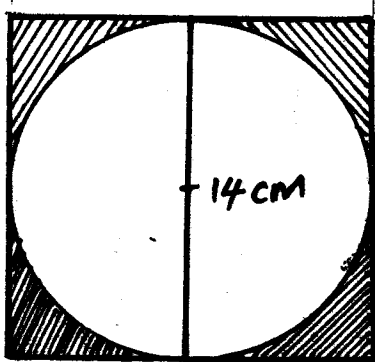
A. 42cm²

B. 154cm²

C. 196cm²

D. 56cm²

19. There are 40 layers and 60 broilers in a certain time at the beginning of the year 2018. By the end of the year the number of layers had decreased in the ratio 3:4 while the broilers had increased in the ratio 6:5. How many chickens were at the end of the year?

A. 80

B. 112

C. 102

D. 92

20. Construct triangle ABC in which angle ABC = 100°. Line BC= 9cm and line AB = 6cm. What is the length of line AC?

A. 12.2cm

B. 11.9cm

C. 12.5cm

D. 11.7cm

21. What is the place value of digit 2 in the product of the total value of digit 7 and 3 in the number 8792.63?

A. Tenths

B. Thousandths

C. Hundredths

D. Tens

22. A man earns sh 30000 per month. He spends $\tfrac{1}{6}$ of it to pay rent, half of it to buy food and half of the remainder to pay water and electricity bills. He saves the rest. How much money does he save in a month?

A. Sh 5000

B. Sh 6000

C. Sh 3000

D. Sh 12000

23. Simplify the following;-

$$3(4x - 2) + \tfrac{1}{3}(9x - 12)$$

A. −9x + 2

B. 15x − 10

C. 9x − 10

D. 15x + 10

24. The base length of a rectangular tank measures 6m by 2m. It contains 30000L when half full. Calculate the height of the tank.
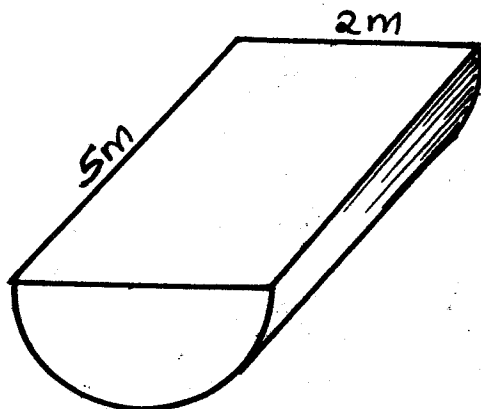
A. 2.5m

B. 6m

C. 3m

D. 5m

25. Given that p = 5, r = 2x, x = p − 1, what is the value of;- $\dfrac{2x^2 - p - r + x}{r - p}$

A. 9

B. 5

C. 13

D. 7⅔

26. How many litres of water can the trough drawn below hold when full of water?

Use $\pi = 3.14$

A. 7850L

B. 15700L

C. 785L

D. 1570L

27. Simplify the following inequality.

$$17 - \tfrac{1}{2}x > 3\tfrac{1}{2}x - 3$$

A. x = 5

B. x > 5

C. x < 5

D. x < 4

28. The hire purchase price of a television set is Sh 24000. The marked price set if Shs. 4000 less than the hire purchase price. Gerald bought it on hire purchase price terms while Ruth bought it on cash. Ruth was given a discount of 10% on the marked price. How much less did Ruth pay than Gerald?

A. Sh 2000

B. Sh 6000

C. Sh 2400

D. Sh 6400

29. The width of a rectangle is represented by $(3x - 6)$cm. Its length if $(x + 10)$cm. Its perimeter is 48cm. Calculate its area.

A. 567cm²

B. 160cm²

C. 105cm²

D. 135cm²

30. Below is a pie chart representing the number of vehicles imported to Kenya from 5 countries in the world in the year 2019.
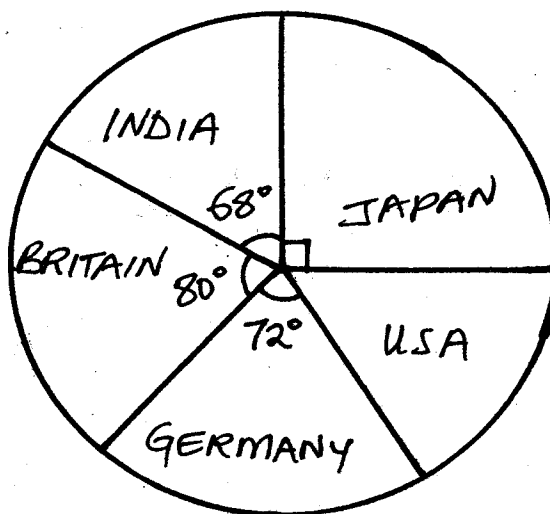
100 vehicles were imported from USA how many vehicles were imported in the year altogether?

A. 360

B. 1296

C. 180

D. 720

31. Kiptang works for a company as a salesman. He earns Sh 7800 as his basic pay and 5% commission on the value of goods sold above Sh 50000. How much money did he earn after selling goods worth Sh 110000 in one month?

A. Sh 60000

B. Sh 3000

C. Sh 10800

D. Sh 13300

32. Betty bought the following items from a shop;

   3 matches boxes @ Sh 4

   A 2kg packet of flour for Sh 110

   2 bars of soap @ Sh 120

   1½kg of sugar at Sh 100 per kg

   1¼ litre of milk at Sh 80 per litre

   How much balance did she get if she paid using 1000 shilling note?

   A. Sh 408

   B. Sh 288

   C. Sh 393

   D. Sh 388

33. Three bells ring at intervals of 30 seconds, 45 seconds and one minute. If they rang together at 1.45pm, when will they ring together again?

   A. 1.46pm

   B. 1.48pm

   C. 1.53pm

   D. 1.56pm

34. The perimeter of the triangle below is 54cm. The length of line BC= 24cm, calculate its area.
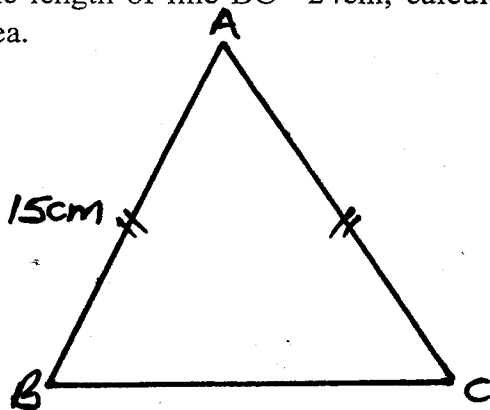
   A. 18cm

   B. 12cm

   C. 54cm

   D. 108cm

35. A motorbike left Nanyuki at 11.30am and arrived at Kisumu at 5.00pm. The distance between the two towns is 550km. Calculate is average speed for the whole journey.

   A. 100km/hr

   B. 88km/hr

   C. 55km/hr

   D. 110km/hr

36. How many cubes are used to make the following stack below?
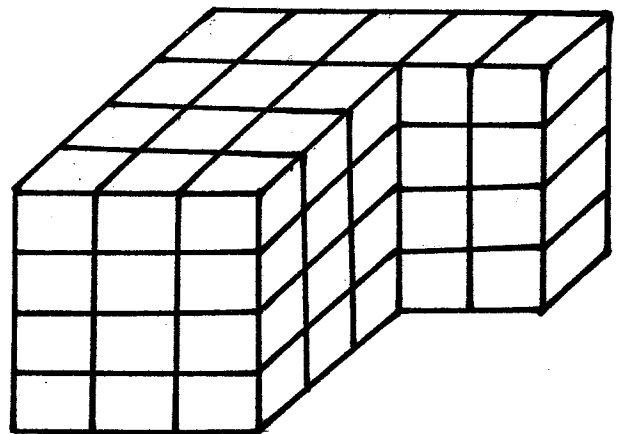
   A. 48

   B. 60

   C. 54

   D. 56

37. What is the next number in the pattern?

   2, 3, 12, 37, _____

   A. 73

   B. 86

   C. 83

   D. 87

38. There were 20 people in a party. $\frac{1}{5}$ of them were adults. The rest were children each adult received a 500ml bottle of soda. While the children took 300ml bottles of soda each. How many litres of soda did they take altogether?

   A. 68L
   B. 70L
   C. 6.8L
   D. 9.2L

39. What is the size of the reflex angle BDE in the diagram drawn below?
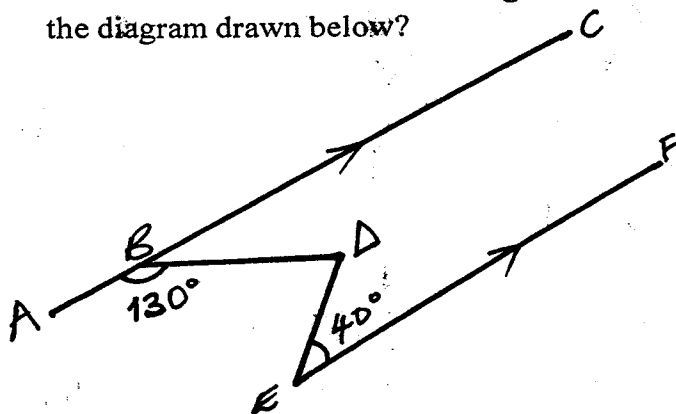
   A. 50°
   B. 170°
   C. 270°
   D. 90°

40. The mean of 7 boxes is 35kg. The mean mass of the seven boxes and an extra one box is 40kg. What was the mass of the eighth box?

   A. 35kg
   B. 75kg
   C. 32kg
   D. 5kg

41. Which one of the following sets of measurement can form a right-angled triangle?

   A. 6cm 8cm 12cm
   B. 5cm 12cm 15cm
   C. 7cm 24cm 26cm
   D. 15cm 17cm 8cm

42. Five points awarded to the winners, no point is awarded to the loser while one point is awarded to each team for a draw. A team participated in 9 games. If it won in 3 games lost in 2 and drew in the rest. How many points were awarded to the team?

   A. 31
   B. 12
   C. 19
   D. 21

43. A carton weighs 13.2kg when fully packed with 36 text books. The empty carton weighs 200g. What is the mass of each book in grams?

   A. 250g
   B. 350g
   C. 320g
   D. 361g

44. A company sold $\frac{1}{5}$ of its product to wholesaler x and $\frac{1}{3}$ to wholesaler Z If wholesaler Z received 14000 items, how many items did wholesaler x receive from the company?
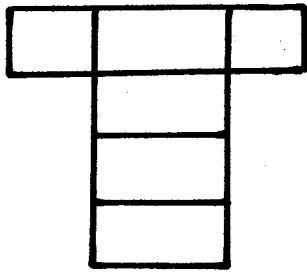
   A. 2800
   B. 7000
   C. 42000
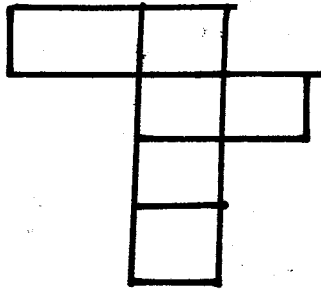   D. 8400

45. Convert 108km/hr into m/s.

   A. 30m/s
   B. 18m/s
   C. 35m/s
   D. 36m/s

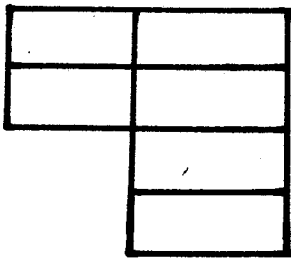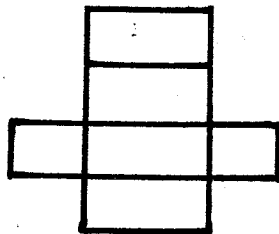**46.** Which one of the following nets cannot make a closed cuboid?
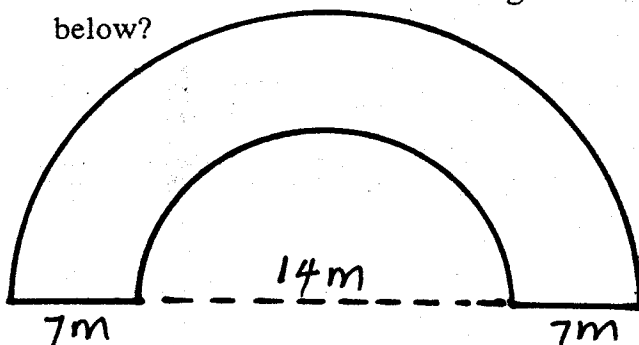
A.

B.

C.

D.

47. The area of a square plot is 0.1225 hectares. It was fenced round using 4 strands of wire. How many metres of wire were used?

A. 140m

B. 280m

C. 560m

D. 4900m
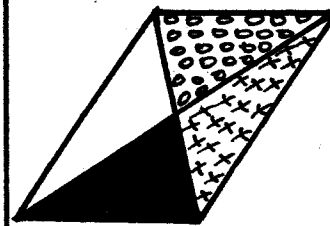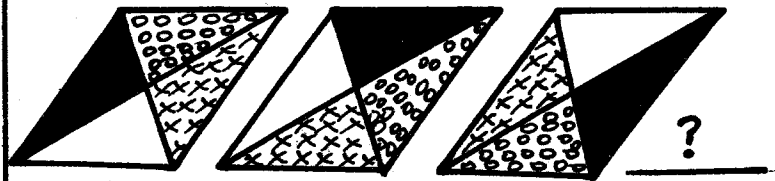
48. What is the distance round the figure drawn below?

A. 72m   B. 146m

C. 80m   D. 66m
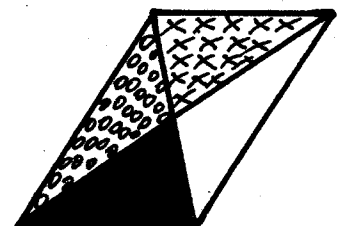
49. Work out twice the value of;-

$$\frac{3.5 \times 9.9 \times 0.48}{1.8 \times 1.4 \times 2.2}$$
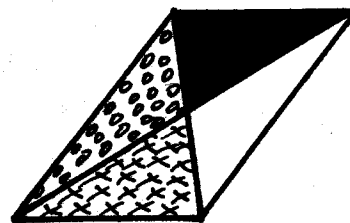
A. 3

B. 6

C. 0.3

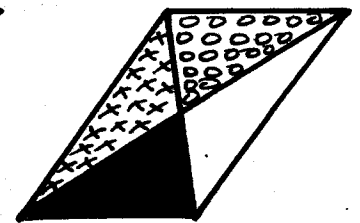D. 0.6

50. What is the next shape in the pattern below?

A.   B.

C.   D.