TARGETER KCPE SIXTH MERIT
STANDARD EIGHT - YEAR 2021

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 the question booklet.
   HOW TO USE THE ANSWER SHEET.

4. Use 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 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:

   31. If $x = y + 1$, $y = \frac{1}{2}z$ and $z = 4$

   What is the value of $\frac{(z^2 + x^2)}{x + y} + \frac{zx}{y}$?

   A. 5
   B. 6
   C. 10
   D. 11

   The correct answer is **D.**
   On the Answer sheet:

   1 [A] [B] [C] [D]   **11** [A] [B] [C] [D]   **21** [A] [B] [C] [D]   **31** [A] [B] [C] [D]   **43** [A] [B] [C] [D]

   In the set of boxes number 31, the box with 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.,

TURN OVER

1. What is four million nine thousand eight hundred and seven written in numerals?

   A. 4090807

   B. 4000987

   C. 40900807

   D. 4009807

2. What is the correct arrangement of the fractions $\frac{4}{9}, \frac{5}{8}, \frac{3}{7}$ and $\frac{8}{11}$ from the smallest to the largest?

   A. $\frac{3}{7}, \frac{4}{9}, \frac{5}{8}, \frac{8}{11}$

   B. $\frac{8}{11}, \frac{5}{8}, \frac{4}{9}, \frac{3}{7}$

   C. $\frac{3}{7}, \frac{5}{8}, \frac{4}{9}, \frac{8}{11}$

   D. $\frac{8}{11}, \frac{4}{9}, \frac{5}{8}, \frac{3}{7}$

3. What is the value of;

   $$\frac{48 + 4^2 + 6^2 - 72 \div 9 \times 2}{\sqrt{64} \div 2^2} \ ?$$

   A. 21

   B. 48

   C. 42

   D. 24

4. What is the value of $500.0001 - 220.0002$ rounded off to the nearest thousandths?

   A. 279.9999

   B. 280.000

   C. 279.999

   D. 280

5. What is the next number in 1.21, 1.69, 2.89, 3.61, _____ ?

   A. 4.41

   B. 4.48

   C. 5.29

   D. 4.00

6. A farmer had goats and sheep. He sold $\frac{1}{6}$ of goats and $\frac{1}{8}$ of sheep. In all he sold 24 animals. If half of the animals sold were goats, how many animals remained?

   A. 168

   B. 82

   C. 72

   D. 144

7. What is square of $2\frac{1}{4}$?

   A. $4\frac{1}{16}$

   B. $5\frac{1}{16}$

   C. $1\frac{1}{2}$

   D. $\frac{2}{3}$

8. What is the value of

   $$80 - \frac{(8.23 + 1.37)}{0.16} \ ?$$

   A. 20

   B. 60

   C. 79.4

   D. 74

9. A milk vendor had milk in 3 containers 20L, 15L and 10L. She then repacked milk in each container into smaller containers of equal capacity. What was the capacity of the largest container used to repack the milk?

   A. 45L

   B. 60L

   C. 5L

   D. 10L

10. A soccer ball was hit and dropped from a height of 40m for every bounce the height decreased by 40%. How high did the ball rise on the second bounce?

    A. 24m

    B. 14.4m

    C. 32m

    D. 8.64m

11. In the year 2006, 26th December was on Tuesday. What day of the week was on 1st march 2007?
A. Friday.
B. Wednesday.
C. Monday.
D. Thursday.

12. In a competition 5 points were awarded for any game won and two points were deducted for any game lost. A pupil attempted 15 games and won 12 of them. How many points did he get?
A. 54
B. 60
C. 6
D. 75

13. What is the value of;

$$\frac{2}{5} + \frac{1}{2}\left(\frac{1}{4} - \frac{1}{6}\right) of \frac{2}{3} \div \frac{1}{3} \ ?$$

A. $\dfrac{1}{60}$

B. $\dfrac{3}{20}$

C. $\dfrac{49}{60}$

D. $\dfrac{29}{60}$

14. Which of the following statements is correct?
A. 0.57 is greater than $\dfrac{4}{7}$

B. $\dfrac{4}{7}$ is greater than 0.57

C. 0.57 is equal to $\dfrac{4}{7}$

D. $\dfrac{4}{7}$ is less than 0.57

15. A rectangular piece of land is 110m by 70m. It was fenced using posts at an interval of 2m. A space measuring 4m was left for the gate. How many posts were used?
A. 180
B. 89
C. 720
D. 179

16. The figure below shows a circle inscribed in a square. The radius of the circle is 7cm. What is the difference between the perimeter of the square and the circumference of the circle?
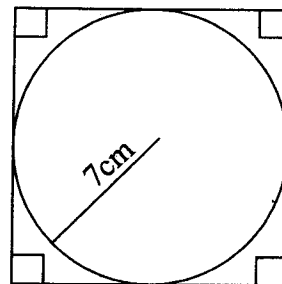
A. 12cm
B. 56cm
C. 100cm
D. 44cm

17. A tank contained 36m³ of water. More water was put into the tank at a rate of 1.2m³ per minute. The tank was full after 20 minutes. What is the capacity of the tank in litres?
A. 60L
B. 24000L
C. 60000L
D. 12000L

18. An empty box weighs 2.4kg. Pendo packed books in the box until the total mass was 9.6kg. If each book weighed 10g, how many books were packed?
A. 1200
B. 720
C. 9600
D. 72

19. A motorist driving at 80km/h was expected to arrive on time at a town 280km away. After driving for one hour, he stopped for 30 minutes to change the wheel. At what speed did he drive after stopping if he had to arrive at expected time?
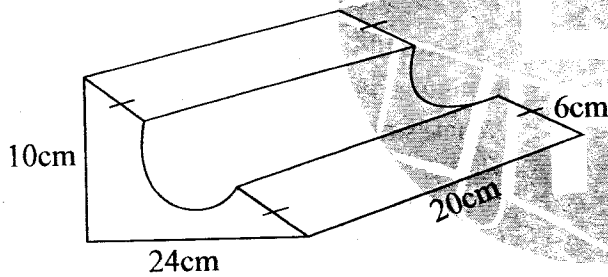A. 80km/h
B. 60km/h
C. 200km/h
D. 100km/h

20. What is the area of the shaded part?
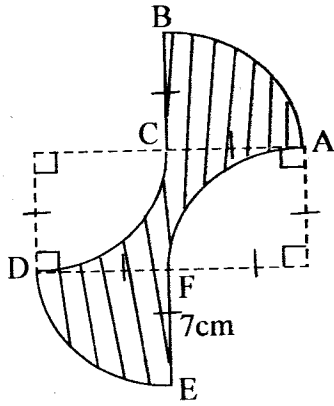
A. 77cm^2
B. 38.5cm^2
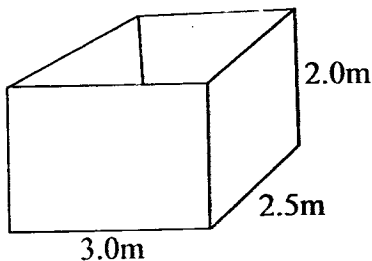C. 98cm^2
D. 154cm^2

21. The figure below shows a triangular prism with a semicircular groove.

What is its volume?
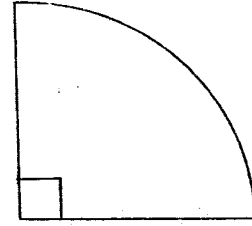A. 860cm^3
B. 2400cm^3
C. 1540cm^3
D. 3940cm^3

22. An open rectangular tank has a base measuring 3.0m by 2.5m and a height of 2.0m. The surfaces of the tank was painted excluding the base.
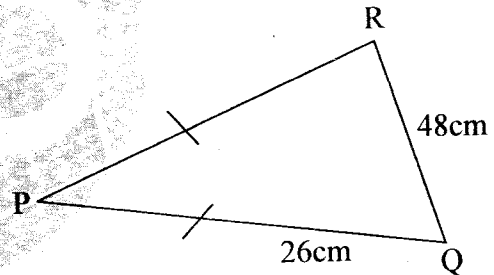

What area was painted?
A. 37m^2
B. 15m^2
C. 22m^2
D. 29.5m^2

23. The figure below is a quadrant. It has a perimeter of 100cm. What is its radius? (Use $\pi = \frac{22}{7}$)
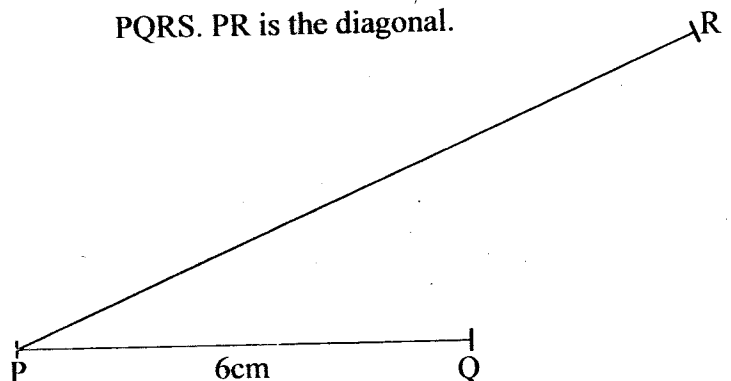

A. 56cm
B. 14cm
C. 28cm
D. 25cm

24. The figure below is an isosceles triangle PQR. PQ = PR and QR = 48cm.

What is the area of the triangle?
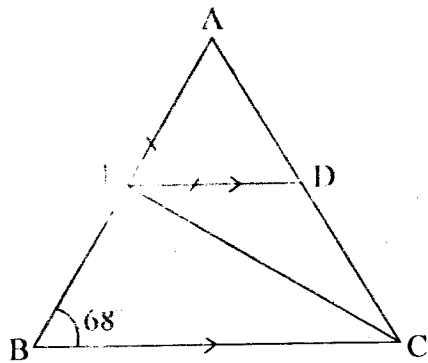A. 624cm^2
B. 120cm^2
C. 60cm^2
D. 240cm^2

25. The figure below shows part of parallelogram PQRS. PR is the diagonal.

Complete the parallelogram. Draw and measure the length of diagonal QS.
A. 9.2cm
B. 4cm
C. 6cm
D. 4.8cm

26. In the figure below ABC is a triangle. Line ED is parallel to line BC. Line AE=ED. Line CE bisect angle BCD. Angle EBC = 68°.

What is the size of angle BCE?
A. 28°
B. 124°
C. 56°
D. 112°

27. The following are properties of a certain quadrilateral
   (i) Opposite sides are parallel
   (ii) Diagonals are not equal.
   (iii) Diagonals divide it into four equal right angled triangles.
   (iv) Interior angles add upto 360°
   The figure is likely to be
   A. Square
   B. Parallelogram
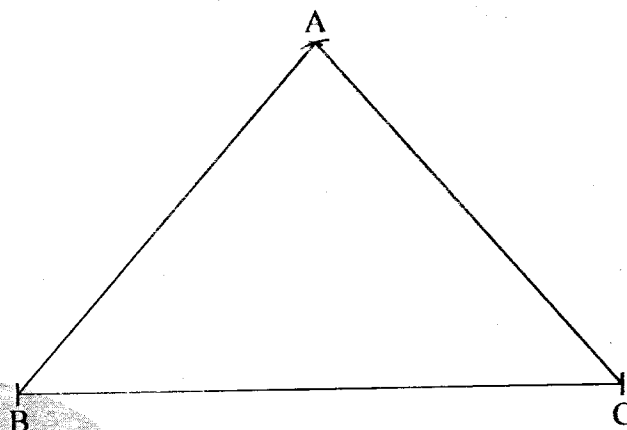   C. Rhombus
   D. Rectangle.

28. The figure below shows a net of a solid.
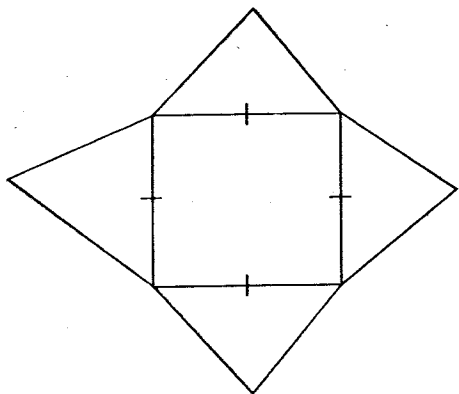
What is the sum of faces and edges of the solid formed when the net is folded?
A. 40
B. 10
C. 25
D. 13

29. Triangle ABC below is drawn accurately. Drop a perpendicular line from point C to meet line AB at point K. Draw the bisector of angle ABC to meet perpendicular line at L.

What is the measure of angle ALC?
A. 70°
B. 110°
C. 135°
D. 45°

30. In the figure below line GY is parallel to line ML. Angle MLH = 136° and KIJ = 66°
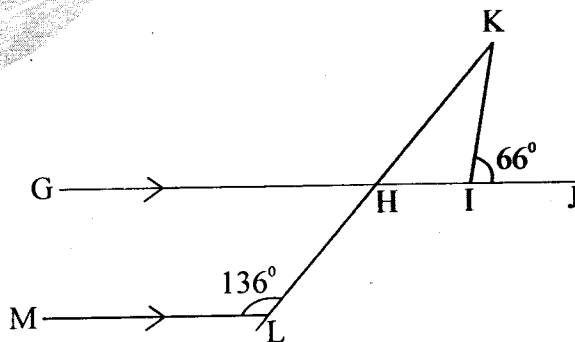
What is the size of angle HKI?
A. 44°
B. 114°
C. 22°
D. 70°

31. Which of the following statements is not true about a right angled triangle?
   A. The longest side is opposite the largest angle.
   B. The sum of the square of two shorter side is equal to the square of the longest side.
   C. Two sides are perpendicular.
   D. A triangle of sides 9cm, 16cm and 25cm is right angled.

MATHEMATICS STD.

TURN OVER

32. Sera is w years old now. She is twice as old as her son. Which of the following expression represent the sum of their ages in ten years' time?

A. $3w + 10$

B. $1\frac{1}{2}w + 20$

C. $1\frac{1}{2}w + 10$

D. $3w + 20$

33. Given that A = 4, B = 6 and C = 2A what is the value of
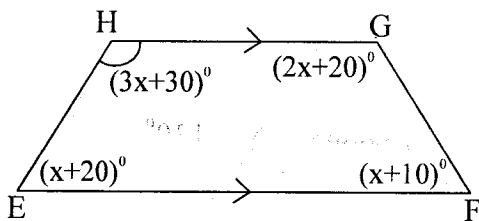
$$\frac{A(2B - C)^2}{A^2 \times \frac{1}{2}C}$$

A. 1
B. 2
C. 4
D. $\frac{1}{4}$

34. What is the value of k in

$$\frac{1}{2} + \frac{2(k-3)}{4} = 4?$$

A. $6\frac{3}{4}$
B. 6
C. 12
D. 10

35. The figure below is a trapezium EFGH

What is the size of angle EHG?
A. 150^0
B. 60^0
C. 100^0
D. 50^0

36. Juma paid sh. 3600 for a suit after he was allowed a discount of 10%. What would have been the percentage discount if he had paid sh 3200?

A. 80%
B. 15%
C. 20%
D. 25%

37. After selling a machine at sh 9600. Chege made a profit of 20%. How much was the buying price?
A. Sh. 7680
B. Sh. 8000
C. Sh. 11520
D. Sh. 1600

38. A sales agent is paid a basic salary of sh. 19000 plus a 9% commission on value of goods sold above sh. 70000. In one month she earned a total of sh. 37000. What was the value of goods sold?
A. Sh. 200000
B. Sh. 25300
C. Sh. 270000
D. Sh. 126000

39. The marked price of a bicycle is sh. 12000. Muli bought it on cash and was allowed a discount of 10%. Kirui bought the same bicycle on hire purchase term. He paid a deposit of sh. 4000 and five equal monthly instalments each sh. 2000. How much more than Muli did Kirui pay?
A. Sh. 24800
B. Sh. 10800
C. Sh. 14000
D. Sh. 3200

40. The table below shows postal charges for sending parcels.

Mass of parcel	East Africa	Rest of Africa	Rest of the world
Not over 20g	39.00	44.00	58.00
Not over 100g	88.00	160.00	144.00
Not over 250g	177.00	204.00	265.00
Not over 500g	309.00	365.00	472.00
Not over 1kg	519.00	608.00	758.00
Not over 2kg	720.00	840.00	1099.00
Each additional 1kg upto 5kg	350.00	420.00	550.00

Karuma sent the following parcels;
A 499g parcel to Botswana.
A 3kg packet to Tanzania
A 501g packet to Brazil
How much did he pay altogether?
A. Sh. 2193
B. Sh. 1843
C. Sh. 1907
D. Sh. 1501

41. Kerubo borrowed sh. 80000 from a bank that charged a compound interest at a rate of 10% p.a. After $1\frac{1}{2}$ years, he withdrew all the interest. How much did he withdraw?

A. Sh. 92400
B. Sh. 12400
C. Sh. 12000
D. Sh. 92000

42. The figure below represents a parallelogram shaped piece of land drawn using the scale 1:10000
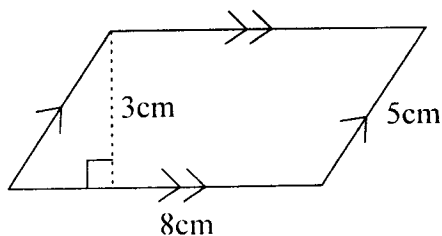

What is its actual area in hectares?
A. 240000
B. 2400
C. 24
D. 0.24

43. In a meeting the ratio of women to men was 2:3. That of men to youth was 4:5. If men were 36, how many people were there altogether?
A. 108
B. 105
C. 45
D. 24

44. Eight women working at the same rate can complete a piece of work in 24 days. How many days can 6 women take to do the same work?
A. 8
B. $1\frac{1}{2}$
C. 18
D. 32

45. The mean of 8 numbers is $7\frac{1}{2}$. Seven of these numbers are 6, 8, 9, 6, 7, 6 and 7. What is the sum of the mode and the median of the 8 numbers?
A. 13
B. 11
C. 14
D. 7

46. The pie chart below shows the number of animals in a farm. There are 20 pigs.
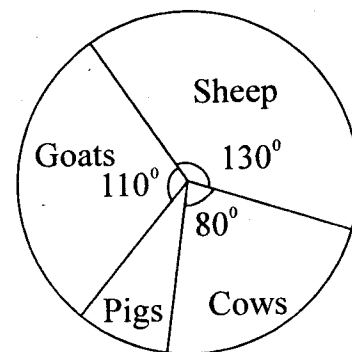
How many more sheep than cows are there?
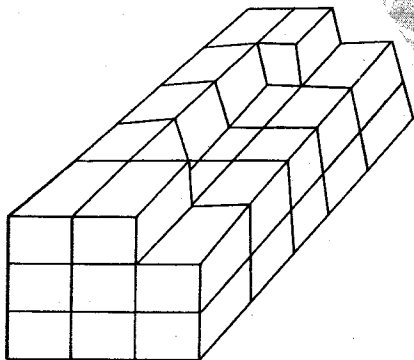A. 65
B. 55
C. 25
D. 120

47. The table below shows two fare for adults in shillings.

A					
40	B				
80	50	C			
120	80	40	D		
180	160	110	80	E	
200	180	160	100	60	F

A parent with his three children left town A for F. They first stopped at town D then travelled to F. How much did they pay altogether?
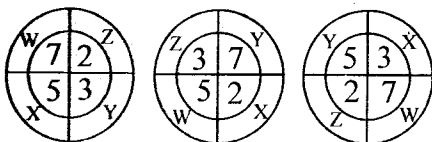
A. Sh. 800
B. Sh. 500
C. Sh. 880
D. Sh. 550
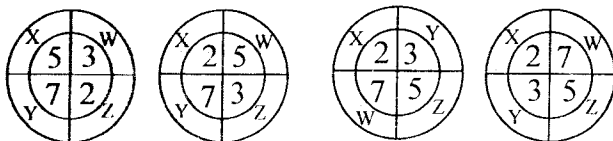
48. How many cubes are used to make the stack below?
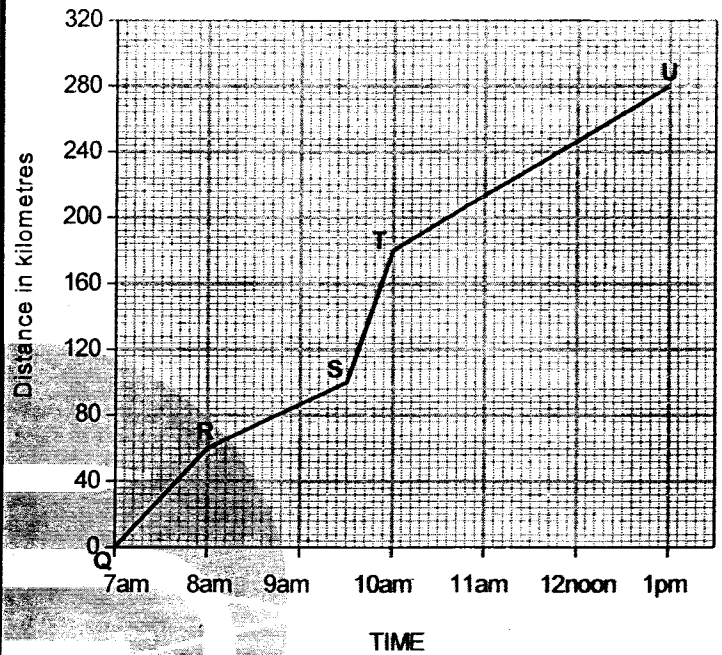

A. 37.
B. 36
C. 40
D. 45

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

A. B. C. D.

50. The graph below shows a journey by a lorry from town Q to U through town R, S and T.

Between which two towns did the driver travel at the highest speed?

A. Q and U
B. R and S
C. S and T
D. T and U