TARGETER KCPE SECOND 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 (the 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. Which of the following angles represents an obtuse angle?
        A. 240⁰
        B. 90⁰
        C. 54⁰
        D. 170⁰

    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| |D̶| **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 3406890.023 written in words?
   A. Three million four hundred and six thousand eight hundred and ninety point zero two three.
   B. Three million four hundred and six thousand eight hundred and ninety and twenty three thousands.
   C. Thirty four million six thousand eight hundred and ninety and twenty three thousandths.
   D. Three million forty six thousand eight hundred and ninety point zero two three.

2. What is the value of $\dfrac{4^2(3^2 \times 2^2)}{\sqrt{16} \times \sqrt{64}}$?

   A. 9
   B. $\dfrac{9}{16}$
   C. 18
   D. 3

3. What is the quotient of the digits in the place value of hundreds and tenths in the number 8246.2384?
   A. 1000
   B. 100
   C. 0.1
   D. 1

4. A pupil wanted to add $\dfrac{3}{4}, \dfrac{5}{6}, \dfrac{2}{7}$ and $\dfrac{5}{12}$. Which of the following numbers did he use as the Least Common Denominator?
   A. 29
   B. 42
   C. 36
   D. 84

5. What is the next number in $\dfrac{3}{4}, 1\dfrac{1}{2}, 2\dfrac{1}{4}, 3,$ ___?

   A. $3\dfrac{3}{4}$
   B. $2\dfrac{3}{4}$
   C. 4
   D. $4\dfrac{1}{4}$

6. The figure below is made of two right angled triangles ABC and BCD.
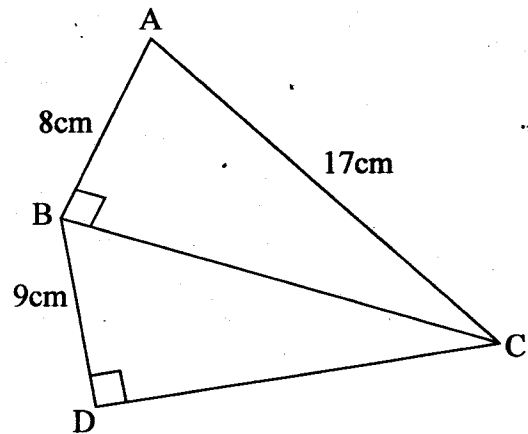
   What is the area of triangle BCD?
   A. 68cm^2
   B. 54cm^2
   C. 36cm^2
   D. 122cm^2

7. What is the difference between the LCM and the GCD of 12 and 18?
   A. 36
   B. 6
   C. 30
   D. 42

8. What is the value of $\dfrac{0.2(1.2^2 + 2.56) \times 3.6}{0.8 \times 1.8}$?

   A. 0.2
   B. 0.02
   C. 20
   D. 2

9. In a school library $\dfrac{1}{3}$ of the books are for English and Kiswahili, $\dfrac{1}{8}$ are Mathematics, $\dfrac{2}{13}$ of the remainder are for Religious Education and the rest are for social studies and science. If there are 220 science and social studies books, how many books are there altogether?
   A. 440
   B. 360
   C. 480
   D. 110

10. Which of the following statement is true?

A. $\dfrac{3}{4} < \dfrac{5}{6}$

B. $\dfrac{7}{8} < \dfrac{5}{7}$

C. $\dfrac{1}{2} + \dfrac{1}{4} > 0.75$

D. $40\% + \dfrac{1}{5} = 70\%$

11. The level of water in a dam was 1200cm. The level of water decreased by 20% every month. What was the level of water at the beginning of third month?

A. 720cm

B. 768cm

C. 614.4cm

D. 960cm

12. In a crusade there were twice as many youths as adults and 28 children less than youths. If there were 136 children, how many people were there?

A. 164

B. 246

C. 300

D. 382

13. What is the value of $\dfrac{1}{4}$ of $\left(\dfrac{5}{6} - \dfrac{3}{4}\right) \div \dfrac{2}{3}$?

A. $\dfrac{1}{12}$

B. $\dfrac{1}{48}$

C. $\dfrac{1}{32}$

D. $\dfrac{1}{72}$

14. What is the smallest 6-digit number written in symbols that can be formed using the symbols 6, 9, 0, 3, 8,5?

A. 035689

B. 986530

C. 309865

D. 305689

15. What is the $\sqrt{0.9604}$?

A. 0.98

B. 9.8

C. 0.098

D. 0.0098

16. A cylindrical rod has a radius of 7cm and a length of $\dfrac{1}{2}$ m. What is its total surface area?
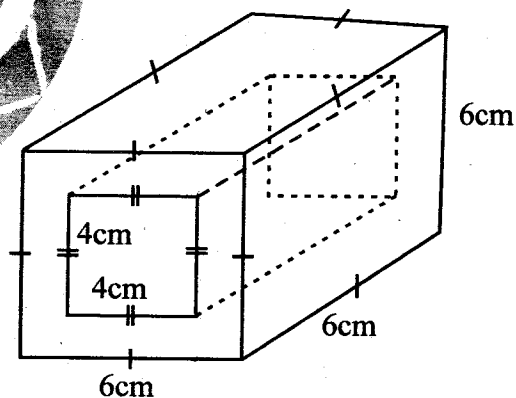
A. 308cm^2

B. 2508cm^2

C. 2354cm^2

D. 2200cm^2

17. The figure below shows a cubical block of wood of sides 6cm. A square hole of sides 4cm is drilled through.

What is the volume of the remaining block of wood?

A. 216cm^3

B. 96cm^3

C. 120cm^2

D. 312cm^3

18. An empty pick up weighs 1.8 tonnes and 4.2 tonnes when loaded with bags of maize germ each 60kg. How many bags were loaded?
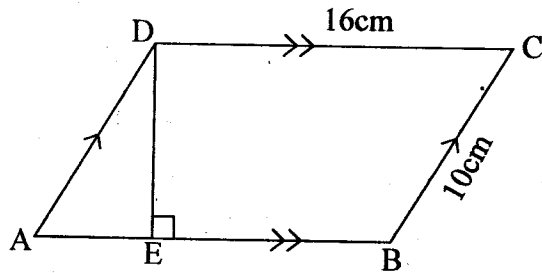
A. 40

B. 30

C. 120

D. 70

MATHEMATICS STD. 8

TURN OVER

19. The area of a parallelogram ABCD below is 128cm². BC=10cm, CD=16cm.

What is the length AE?

A. 8cm

B. 6cm

C. 22cm

D. 10cm

20. A motorist left home at 8.30am. He travelled at a speed of 80km/h for $1\frac{1}{2}$ hours. He rested for 50minutes. He then travelled back at a speed of 60km/h. At what time did he arrive at home?

A. 10.50am

B. 12.50am

C. 10.50pm

D. 12.50pm

21. A cylindrical tank of diameter 1.4m and a height of 4m is half full of water. How much water in litres is in the tank?

A. 3080

B. 6160

C. 1540

D. 12320

22. A watch gains 5 seconds every hour. It was set correct on Monday at 11.20am. What time was it showing on Tuesday the same week at 11.20am?

A. 11.18am

B. 11.22pm

C. 11.18pm

D. 11.22am
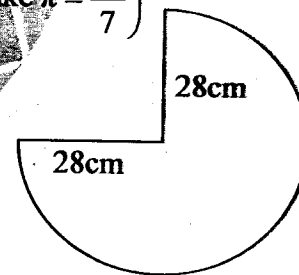
23. The perimeter of an isosceles triangle below 50cm.
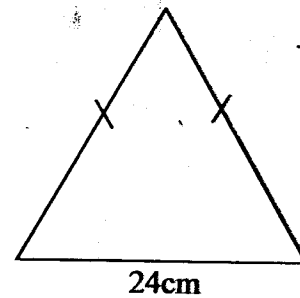
What is the perpendicular height of the triangle?

A. 12cm

B. 10cm

C. 5cm

D. 6cm

24. What is the perimeter of the figure below? $\left(\text{Take } \pi = \frac{22}{7}\right)$

A. 132cm

B. 188cm

C. 176cm

D. 1848cm

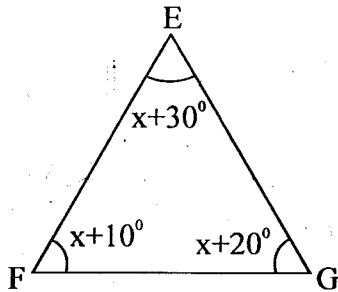**25.** What is the value of x in $\frac{x}{2}+\frac{x}{4}=6$?

A. 8

B. 4

C. 16

D. 2

26. Given that a=6, b=$\frac{1}{2}$ a and c = $\frac{1}{3}$ a, what is half the value of $\frac{2(abc)}{a-c}$?

A. 18

B. 36

C. 9

D. 6

**27.** The following figure is a triangle EFG

What is the size of angle EFG?

A. 40^0

B. 50^0

C. 60^0

D. 70^0

28. What is $3(\frac{2}{3}x + \;) + 3x - 4y$ in simplest form?

A. 5x+10y

B. 5x-10y

C. 5x-2y

D. 5x+2y

29. Which of the following statements is true about a rectangle and a parallelogram?

A. Have two pairs of parallel sides.

B. Diagonals are equal.

C. Interior angles add upto 180^0.

D. Diagonals bisect the angles.

30. In the figure below line AB is parallel to line CD. Lines BC and AD are transversals which intersect at E. Angle BAE=40^0, line AE=BE and EC=ED
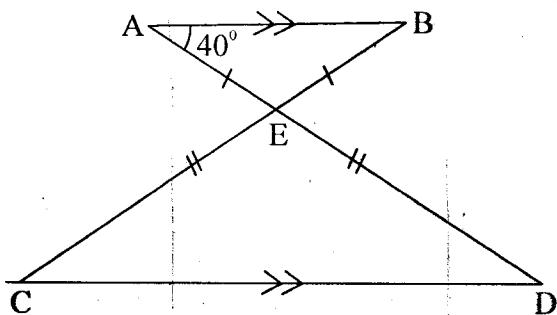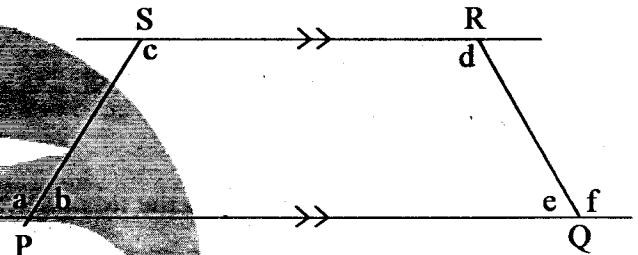

What is the size of angle ECD?

A. 80^0

B. 100^0

C. 40^0

D. 140^0

31. Construct a triangle WXY such that WX=7.5cm, angle WXY=50^0 and angle XWY=30^0. Draw a circle touching the three vertices. What is the length of the radius?
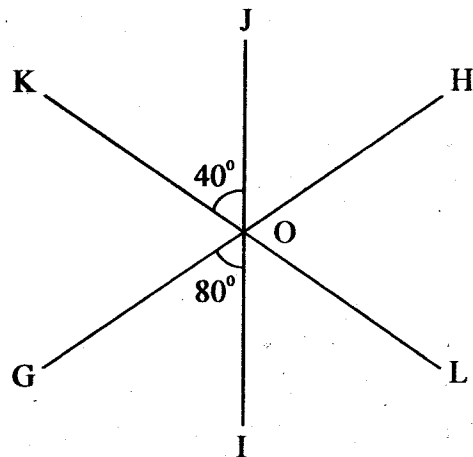
A. 1.3cm

B. 7.6cm

C. 2.6cm

D. 3.8cm

32. Which statement is not true about the figure below given that PQRS is a trapezium?

A. b+c+d+e=360^0

B. c+d=b+e

C. d+e=180^0

D. a+b=e+f

33. In the figure below lines GH,IJ and KL are straight lines that intersect at O. Angle KOJ=40^0 and GOI=80^0.

What is the complement of angle HOL?

A. 30^0

B. 60^0

C. 120^0

D. 10^0

34. Pupils made a skeleton model of a cuboid using pieces of wire of length 16cm, 7cm wide and 4cm high. What was the total length of wire used?
A. 448cm
B. 408cm
C. 108cm
D. 296cm

35. Peupe bought the following items from a grocery:
3kg of carrots @sh. 40
3 cabbages @ sh. 25
1$\frac{1}{2}$ kg of tomatoes at sh. 80 per kg
Three-2kg packets of maize at sh. 35
2kg of onions for sh. 120
How much did she pay for the items?
A. sh. 453
B. sh. 540
C. sh. 660
D. sh. 645

36. After selling a goat for sh. 12000, Mutemi made a profit of 20%. For how much had he bought the goat?
A. sh. 10000
B. sh. 14400
C. sh. 2000
D. sh. 2400

37. Rose deposited sh. 10000 in a bank that paid a simple interest at a rate of 5% per month. How much was in her account after 1 year?
A. sh. 10500
B. sh. 6000
C. sh. 500
D. sh. 16000

38. The hire purchase price of a sofaset is 10% more than the marked price. Ontita paid a deposit of sh. 7000 followed by 13 equal monthly instalments each sh. 2000. How much was the marked price?
A. sh. 26000
B. sh. 33000
C. sh. 30000
D. sh. 3300

39. A sales agent is paid a basic salary of sh. 18000 plus a 6% commission on value of goods sold above sh. 20000. What was her total earning in a month she sold goods worth 180000?
A. sh. 28800
B. sh. 27600
C. sh. 9600
D. sh. 10800

40. Wairimu paid sh. 990 for a dress after she was allowed a discount of 10%. How much would she have paid if the discount of 20%?
A. sh. 880
B. sh. 1100
C. sh. 900
D. sh. 110

41. The table below shows postal charges for sending parcels

	Parcel	
Limit of weight 50kg	upto 5kg	50.00
	over 50kg upto 10kg	90.00
	over 10kg upto 15kg	170.00
	over 15kg upto 20kg	250.00
For each additional 1kg or part thereof upto 50kg		12.00

Bakari posted two parcels one 18kg and 24kg. How much did he pay for postage?
A. sh. 548
B. sh. 500
C. sh. 512
D. sh. 524

42. Seven men working at the same rate can complete a piece of work in 21 days. How many more days can 3men working at the same rate take to complete the work?
A. 49
B. 70
C. 28
D. 9

43. A fruit vendor was saving sh. 240 everyday. She increased her saving in the ratio 4:3. What was her increase in savings?

A. sh. 80
B. sh. 320
C. sh. 180
D. sh. 60

44. A rectangular piece of land is represented on a map by a rectangle 3cm by 2cm
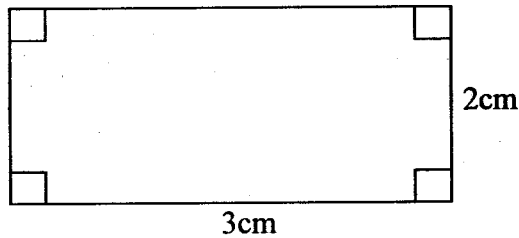
What is the actual area of the piece of land in hectares if the scale is 1:20000?

A. 6
B. 24
C. 240000
D. 240

45. The table below shows the number and types of vehicles that passed near a certain school in one day

Type of vehicle	Cars	Buses	Pick-ups	Matatus	Lorries	Tractors
No. of vehicles	12	5	10	13	10	4

What is the sum of the mode and the mean number of vehicles?

A. 10
B. 9
C. 19
D. 90

46. The table below shows distance in kilometres between towns

P				
12	Q			
18	14	R		
22	16	15	S	
28	24	18	16	T

A tractor driver drove from town P to T via R. How long did he take if he travelled at an average speed of 12km/h?
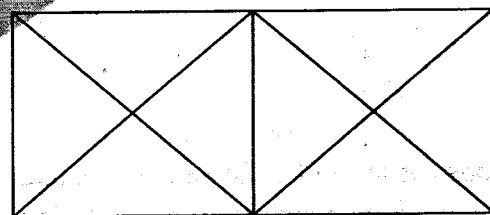
A. 36hours
B. 2hours
C. $2\frac{1}{3}$ hours
D. 3hours

47. The stack below is made of cubes glued together. It was painted allover.
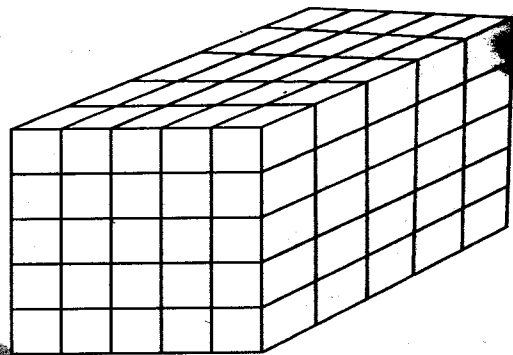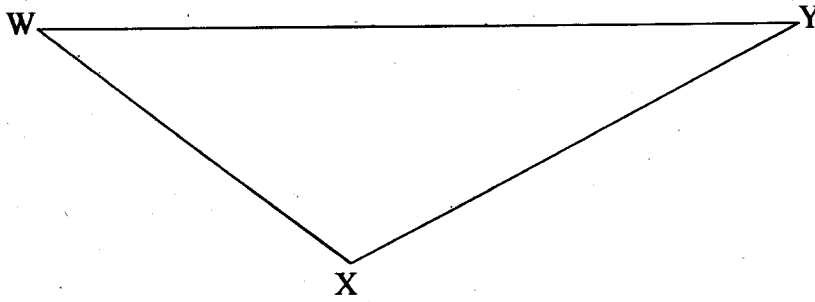

How many cubes had three faces painted?

A. 125
B. 7
C. 8
D. 6

48. How many triangles can be seen in the figure below?
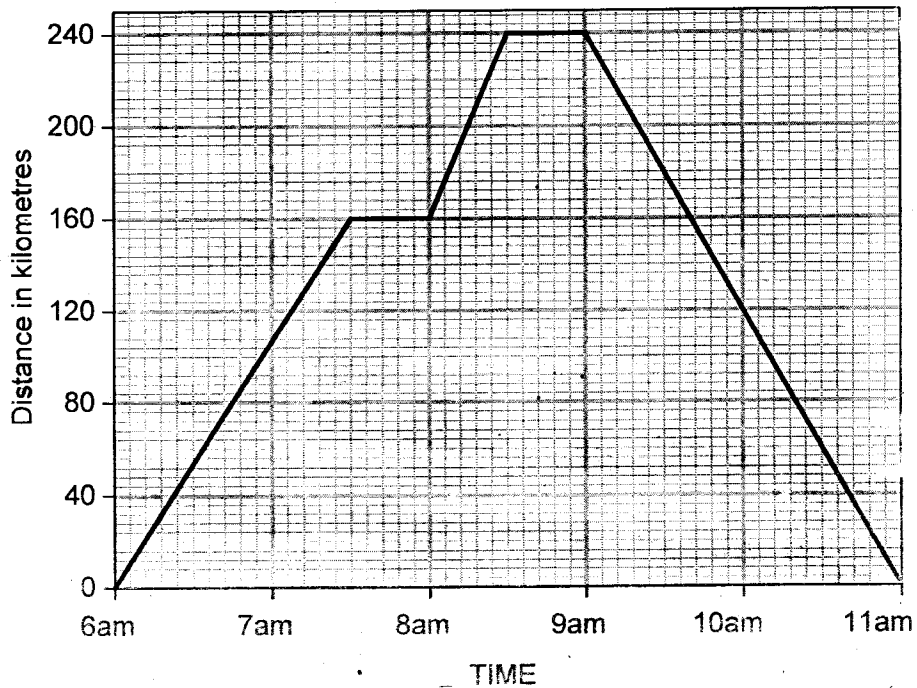

A. 8
B. 18
C. 16
D. 12

49. The figure below has been drawn accurately.

What is the size of angle WXY?

A. 115^0

B. 65^0

C. 110^0

D. 70^0

50. ~~The~~ graph below shows a motorist's journey from home to town and back.

What was the average speed for the whole journey?

A. 48km/h

B. 120km/h

C. 80km/h

D. 96km/h