STANDARD SEVEN

DISCOVERY NATIONAL EXAMINATIONS
KCPE COMPLIANT 2021

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 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 mark outside the boxes.
8. Keep the answer sheet as clean as possible and **DO NOT FOLD IT.**
9. For each of the questions 1-50, 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 the correct answer is to be shown by drawing **a dark line** inside the box in which the letter you have chosen is written.

Example:

In the question booklet:

8. A plane was flying at a speed of 288km/hr. Calculate the average speed in m/s.
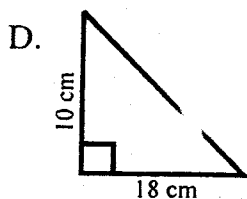   A. 120 m/s
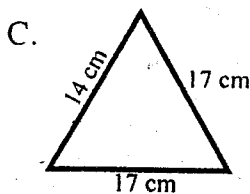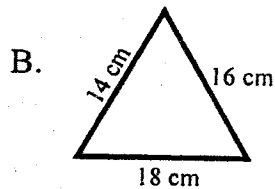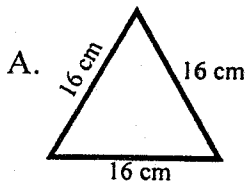   B. 80m/s
   C. 144m/s
   D. 48m/s

The correct answer is **B** on the answer sheet:

7 [A] [B] [C] [D]   8 [A] [B] [C] [D]   9 [A] [B] [C] [D]   10 [A] [B] [C] [D]   11 [A] [B] [C] [D]
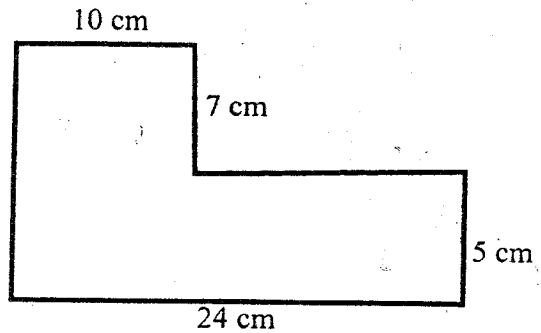
11. Your **dark line MUST** be written in the box
12. For each question **ONLY ONE** box is to be marked in each set of four boxes.

**This question paper consist of 8 printed pages**

1. What is the value of digit 4 in the number 72409?
   A. 100.
   B. Four hundred.
   C. Hundreds.
   D. 4000.

2. Which one of the following is 200202?
   A. Two hundred thousand two hundred and two.
   B. Twenty hundred thousand two hundred and two.
   C. Twenty million two hundred and two.
   D. Two million two hundred and two.

3. What is 12024 divided by 4?
   A. 306
   B. 36
   C. 3006
   D. 30006

4. What is the LCM of 15, 20, 30?
   A. 5.
   B. 15.
   C. 60.
   D. 120.

5. What is the square root of $\sqrt{81}$?
   A. 9
   B. 6561
   C. 27
   D. 3

6. Which of the triangles below is an isosceles triangle?

A.
16 cm / 16 cm / 16 cm

B.
14 cm / 16 cm / 18 cm

C.
14 cm / 17 cm / 17 cm

D.
10 cm / 18 cm

7. What is the perimeter of the following diagram?

10 cm
7 cm
5 cm
24 cm

   A. 46
   B. 48
   C. 72
   D. 36

8. By how much is the perimeter of the square more than the circumference of the circle shown below?


14 cm   14 cm

   A. 44 cm
   B. 12 cm
   C. 56 cm
   D. 70 cm
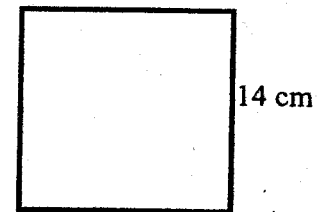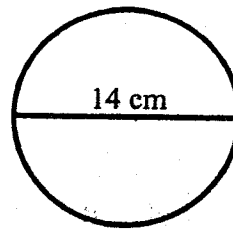
9. Tulesi earns 990 per day while his wife earns 880 per day. How much do they earn per week altogether?
   A. 13090
   B. 1870
   C. 6160
   D. 6930

10. In a hall there are 50 benches. Each bench can a commodate 10 people. If all benches were full except one which was broken. How many people were in the hall?
A. 500
B. 60
C. 450
D. 490

11. Evaluate:- 15 - 18.64 + 7.82
A. 4.18
B. 25.82
C. 11.46
D. 41.46

12. Mr Lugano bought a mobile phone and sold it at sh. 7000 making a 40% profit. What was the buying price of the phone?
A. sh. 6960
B. sh. 9800
C. sh. 5000
D. sh. 4200

13. What is the value of V in the magic square below?

	1	6
3	5	
4		V

A. 2
B. 24
C. 9
D. 15

14. A motorist started his journey at 10:35 am. If he reached his destination at 4:55 pm, how long did the journey take?
A. 6 hr 20 min
B. 5 hr 40 min
C. 5 hr 20 mins
D. 6 hr 40 mins

15. What is the next number in the sequence below?
2, 6, 12, 20, 30, _____
A. 48
B. 40
C. 36
D. 42

16. What is the capacity of the tank below in litres?
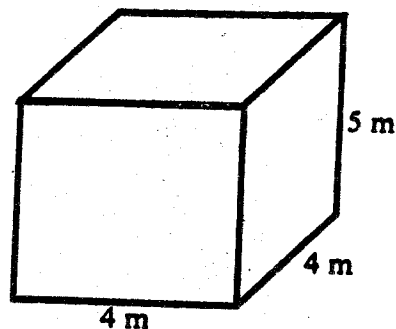
A. 80 m³
B. 80 litres
C. 80000 litres
D. 800 litres

17. Which of the following mathematical instrument is used in drawing parallel lines?
A. A protractor.
B. A pair of compass.
C. A set square.
D. Non-of the above

18. Work out: $4^2 + \sqrt{36 \times 3^2}$

A. 224
B. 22
C. 34
D. 340

19. Evaluate: $3/_4 \div 7/_{12} \times 1/_3$

A. $^{21}/_{48}$
B. $2^{37}/_{49}$
C. $^5/_{48}$
D. $^3/_7$

20. The price of a goat was sh. 6000. the price was later increased by 20%. What is the new price of the goat?

A. 1200
B. 7200
C. 4800
D. 6100

21. If 60% represents 240 girls, how many girls are represented by 70%?

A. 400
B. 280
C. 160
D. 40

22. What is the area of the piece of land shown below in hectares?

20 m

10 m
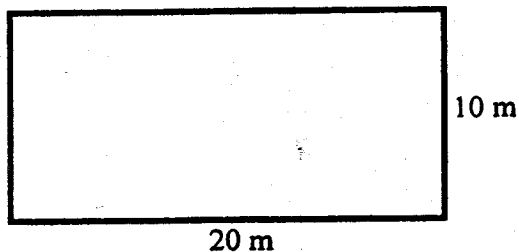
A. 200 ha
B. 2 ha
C. 0.02 ha
D. 0.2 ha

23. What is the radius of a circle whose circumference is 88?
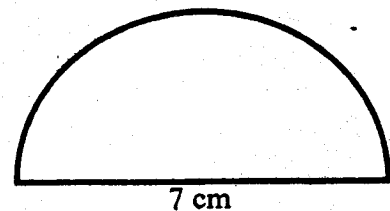
A. 14
B. 28
C. 7
D. 56

24. Work out:-

	t	kg	g
4	14	24	424

	t	kg	g
A.	3	6	106
B.	3	506	106
C.	3.2	6	16
D.	3.2	506	16

25. Find the value of y: $3y - 7 = 20$

A. 10
B. 9
C. 3
D. 10

26. What is the perimeter of the shape below?

7 cm

A. 29
B. 18
C. 44
D. 11

27. What is the product of 0.03 and 0.08?

A. 0.24
B. 2.4
C. 0.0024
D. 0.024

28. How many faces does an open cube has?
   A. 4
   B. 5
   C. 6
   D. 7

29. How many more kilograms are needed to make $9\frac{1}{4}$ tonnes weigh 10 tonnes?
   A. 1000 kg
   B. 250 kg
   C. 750 kg
   D. 500 kg

30. Work out: $6.36 \div 3 =$
   A. 2.12
   B. 212
   C. 21.2
   D. 212.0

31. The volume of a rectangular water tank is 108 m³. If the height of the tank is 2 m, what is its base area?
   A. 216 m²
   B. 54 m²
   C. 216 cm²
   D. 54 cm²

32. A bus left Kisumu at 2:00 pm and took 10 hours to reach Nairobi. At what time in 24 hour system did the bus reach Nairobi?
   A. 0000 hrs
   B. 0100 hrs
   C. 0200 hrs
   D. 2300 hrs

33. Alonso takes two decilitres of milk everyday. How many litres does he take in one week?
   A. 14 litres
   B. 1 litre
   C. 1.4 litres
   D. 2.8 litres

34. What is 900 ha in square metres?
   A. 9 m²
   B. 9000000 m²
   C. 9000 m²
   D. 90 m²

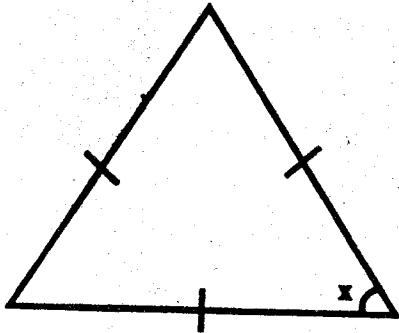35. Which of the lines below is perpendicular to line AB?
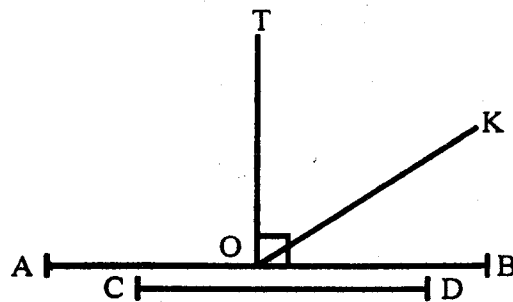
   A. CD
   B. TO
   C. None
   D. OK

36. How many prime numbers are there between 90 and 100?
   A. 2
   B. 97
   C. 1
   D. 2

37. Remove the brackets and simplify
$2(2a + b)$
A. $4a + b$
B. $4a + 2b$
C. $4a + 4b$
D. $4ab$

38.

Find the value of the angle marked **x**.
A. 180°
B. 60°
C. O°
D. None of the above

39. Which one of the following symbol will complete the statement below?
A right angle _____ an acute angle
A. >
B. =
C. ≤
D. ≥

40. Find the area of a square room whose perimeter is 20 cm?
A. 100 cm²
B. 400 cm²
C. 16 cm²
D. 25 cm²

41. Workout:

kg	g
78	120
x	5

A. 396 kg 200 g
B. 390 kg 600 g
C. 360 kg 200 g
D. 350 kg 600 g

42. The distance between two shops is represented by 7 cm. The length is drawn using the scale 1 cm represent 20 m. What is the distance between the two shops?
A. 1.4 m
B. 14 m
C. 1400
D. 140 m

43. The table below shows daily sales of cows at Kajiado market.

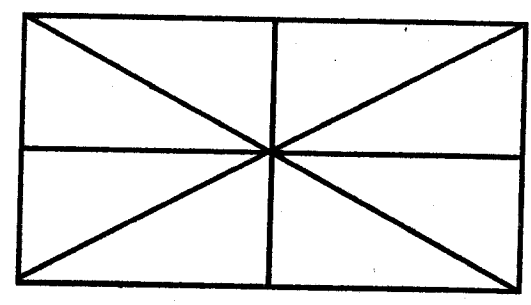| Day	Mon	Tue	Wed	Thur	Fri
No of cows	54	63	68	71	64

What was the mean number of cows sold during the week?
A. 70
B. 64
C. 55
D. 80

44. Lalana bought $3\frac{1}{4}$ kg of meat. How grams did he buy?
A. 3000 250 g
B. 3025 g
C. 30025
D. 3250 g

45. What is the least number that should be subtracted from 4127 to make it divisible by 11?
A. 2
B. 4
C. 3
D. 9

46. The fractions $^7/_9$, $^4/_5$, $^5/_6$ were to be arranged in order from the largest to the smallest. Which one shows the correct order?
A. $^4/_5$, $^5/_6$, $^7/_9$
B. $^7/_9$, $^4/_5$, $^5/_6$
C. $^5/_6$, $^4/_5$, $^7/_9$
D. $^4/_5$, $^7/_9$, $^5/_6$

47. Dodoi walks to school everyday. The school is 2 km away from home. How many km does Dodoi cover in one week?
A. 4 km
B. 28 km
C. 20 km
D. 14 km

The graph below shows the number of customers who visited Wemacho hotel.
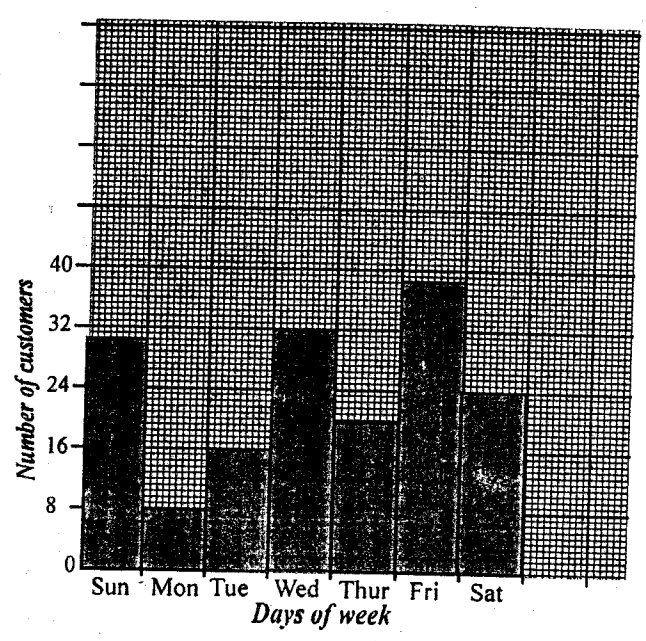
48. On which day did the hotel have most customers?
A. Monday
B. Wednesday
C. Friday
D. Sat

49. Which two consecutive days did the hotel receive the least number of customers?
A. Sunday and Monday
B. Monday and Tuesday
C. Friday and Sunday
D. Wednesday and Thursday

50. How many triangles can be formed in the figure below?

A. 16
B. 10
C. 8
D. 12