



STANDARD SEVEN

DISCOVERY
CENSOR

DISCOVERY NATIONAL EXAMINATIONS KCPE COMPLIANCE 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:

[A] [B] [C] [D] [A] [B] [C] [D] [A] [B] [C] [D] [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

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Discovery National Examinations 2021

TURN OVER

1. Which one of the following numbers is eight million, eight hundred and eight thousand and eighty eight in numerals?

- A. 8808808
- B. 8088088
- C. 8808088
- D. 8808888

2. What is the total value of digit 5 in the number 352168?

- A. 5000
- B. 50000
- C. 500
- D. 500000

3. What is the sum of the squares of 18 and 12?

- A. 324
- B. 568
- C. 144
- D. 468

4. What is 236984 rounded off to the nearest ten thousand?

- A. 237000
- B. 230000
- C. 240000
- D. 200000

5. The area of a square plot is 3136m^2 . what is its perimeter?

- A. 224 m
- B. 112m
- C. 448 m
- D. 242m

6. What is the value of;

$$\frac{9^2 + 9 + 9}{9}$$

- A. 11
- B. 28
- C. 18
- D. 19

7. What is the smallest number that can be subtracted from 99157 to make it divisible by 11?

- A. 2
- B. 3
- C. 1
- D. 4

8. Find the sum of the G.C.D and L.C.M of 12, 18, and 24.

- A. 54
- B. 60
- C. 78
- D. 72

9. What is the value of;

$$1 + 2 + 3 (1 + 2 + 3) ?$$

- A. 36
- B. 12
- C. 18
- D. 21

10. What is the value of;

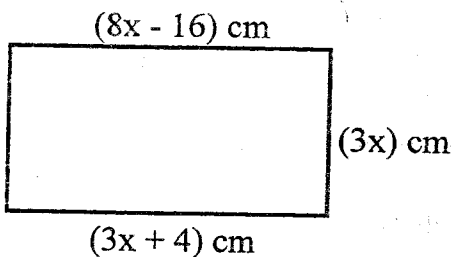
$$\frac{8.1 \times 5.4 \times 2.5}{0.5 \times 1.8}$$

- A. 1.215
- B. 12.15
- C. 121.5
- D. 1215

11. The speed of a matatu was 72km/h.
What was its speed in m/sec?
- A. 20 m/sec
 - B. 25 m/sec
 - C. 10 m/sec
 - D. 15 m/sec

12. The circumference of a circle is 88 m.
What is the diameter of the circle?
- ($\pi = \frac{22}{7}$)
- A. 42 m
 - B. 21 m
 - C. 28 m
 - D. 56 m

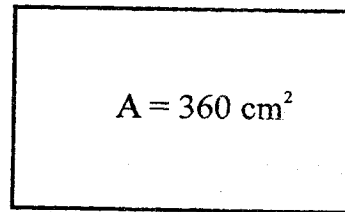
13. The figure below is a rectangle.



Find its area.

- A. 192 cm^2
 - B. 180 cm^2
 - C. 168 cm^2
 - D. 216 cm^2
14. How many groups of 100 are there in the total values of digit 4 in the number; 9 4 6 8 1 ?
- A. 40
 - B. 400
 - C. 4000
 - D. 40000

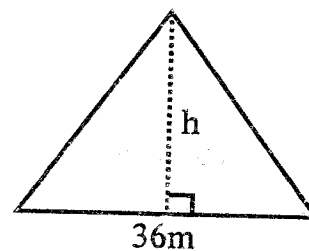
15. The area of the rectangle drawn below is 360 cm^2 .



If its length is 90 cm, what is the measure of its width?

- A. 6 cm
 - B. 4 cm
 - C. 60 cm
 - D. 40 cm
16. A length of 54km is represented by a line 6 cm long. What length in km will be represented by a line 10 cm long?
- A. 90 km
 - B. 0.9 km
 - C. 9 km
 - D. 900 km

17. The area of the triangle drawn below is 324 m^2 .



Find the height of the triangle of the base length is 36m?

- A. 36m
- B. 9 m
- C. 24 m
- D. 18m

18. Mercy bought the following items from a shop.

- 2 kg of maize flour for sh. 150

- $1\frac{1}{2}$ kg of rice @ sh 80 per kg

- 4 kg of sugar @ sh 120

If she gave the shopkeeper a one thousand shilling note, what balance did she receive?

- A. sh 150
- B. sh 450
- C. sh 250
- D. sh 350

19. Nduru paid sh. 840 for a bag whose marked price was sh. 960. Find the percentage discount allowed/

- A. 25%
- B. 12.5%
- C. 30%
- D. 40%

20. Increase 80000 by 20%

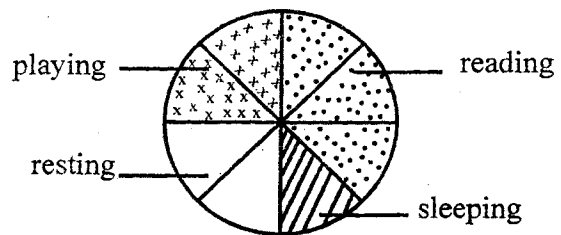
- A. 84000
- B. 120000
- C. 64000
- D. 96000

21. Simplify the expression below.

$$4(2a + 6b) + 3(3a - 2b)$$

- A. $17a + 18b$
- B. $18a - 17b$
- C. $18a + 17b$
- D. $17a - 18b$

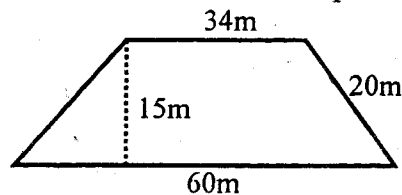
22. The pie chart below shows how Kariuki spends his time.



How many hours does he spend reading?

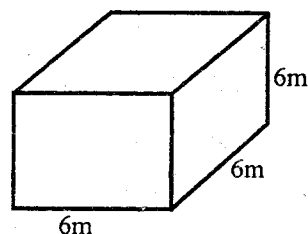
- A. 4 hours
- B. 6 hours
- C. 3 hours
- D. 9 hours

23. Find the area of the trapezium below.



- A. $940m^2$
- B. $450m^2$
- C. $705m^2$
- D. $750m^2$

24. What is the total surface area of the closed cube drawn below?



- A. $36m^2$
- B. $180m^2$
- C. $144m^2$
- D. $216m^2$

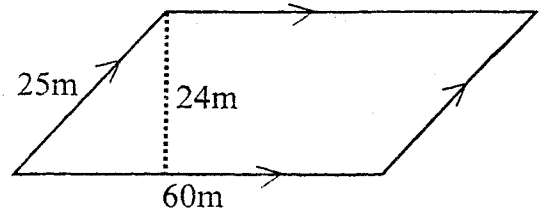
25. The following fractions were to be arranged in ascending order.

$$\frac{3}{5}, \frac{2}{3}, \frac{1}{2}, \frac{5}{7}$$

What is the correct order?

- A. $\frac{5}{7}, \frac{2}{3}, \frac{3}{5}, \frac{1}{2}$
B. $\frac{1}{2}, \frac{2}{3}, \frac{3}{5}, \frac{5}{7}$
C. $\frac{1}{2}, \frac{3}{5}, \frac{2}{3}, \frac{5}{7}$
D. $\frac{3}{5}, \frac{1}{2}, \frac{2}{3}, \frac{5}{7}$
26. The sum total of 6 numbers is 38. If 5 of the numbers are 9, 8, 6, 4 and 5, find the sixth number.
A. 7
B. 6
C. 5
D. 4
27. Decrease 200 by 40%
A. 120
B. 160
C. 80
D. 280
28. A lorry was packed with 100 - 90 kg bags of maize. If the mass of the empty lorry is 3.5 tonnes. What is the total mass of the loaded lorry in tonnes?
A. 900 t
B. 12.5 t
C. 9 t
D. 125 t

29. The figure below shows a parallelogram.

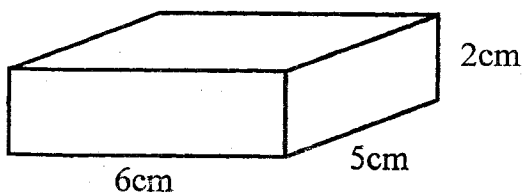


Find its area in m^2

- A. $1500 m^2$
B. $1440 m^2$
C. $1600 m^2$
D. $1800 m^2$
30. What is $1\frac{1}{4}\%$ as a fraction in its simplest form?
A. $\frac{5}{400}$
B. $\frac{5}{4}$
C. $\frac{1}{80}$
D. $\frac{4}{5}$
31. Kipkemoi spent sh. 5400 from his salary to pay school fees for his son. If this was $\frac{2}{5}$ of his salary, find his full month salary.
A. sh. 1200
B. sh 4800
C. sh. 24300
D. sh. 30000

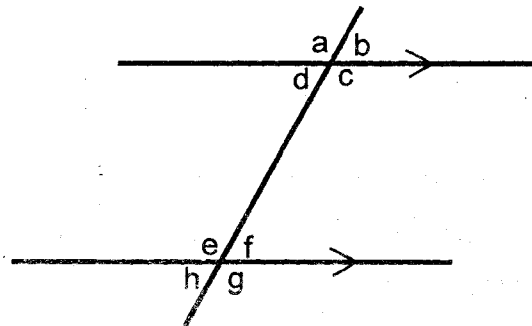
32. Denis is 5 times as old as his son. His wife is 2 years younger than him. If the son is x years old, write an expression to show their total age.
- A. $10x - 2$
 B. $11x - 2$
 C. $11x + 2$
 D. $10x + 2$

33. What is the volume of the match box drawn below?



- A. 60 cm^3
 B. 30 cm^3
 C. 60 cm^2
 D. 30 cm^2
34. 15 men can do a piece of work in 40 days. How long will 20 men take to do the same piece of work?
- A. 24 days
 B. 18 days
 C. 25 days
 D. 20 days
35. If $a = 2$, $b = 3$ and $c = 4$, find the value of;
- $$\frac{a^2b + c}{a + b}$$
- A. $2 \frac{1}{2}$
 B. $3 \frac{1}{5}$
 C. $3 \frac{3}{5}$
 D. $5 \frac{1}{3}$

36. What is 841.0948 rounded off to the nearest hundredths?
- A. 841.00
 B. 841.09
 C. 841.090
 D. 841.10
37. Which of the following statements is true according to the diagram drawn below?



- A. Angle $a + \text{angle } g = 180^\circ$
 B. Angle $b + \text{Angle } h = 180^\circ$
 C. Angle $e + \text{angle } b = 180^\circ$
 D. Angle $h = \text{angle } a$
38. What is the complement of angle 42° ?
- A. 138°
 B. 148°
 C. 48°
 D. 58°
39. How many grams are there in $7\frac{2}{5}$ kg?
- A. 7200 g
 B. 7600 g
 C. 7400 g
 D. 7800 g

40. A meeting started at 9.30 am and took 8 hour 45 minutes. At what time did the meeting end?
- A. 6.15 am
 B. 5.15 am
 C. 5.15 pm
 D. 6.15 pm

41. The table below shows the number of packets of milk sold by a shopkeeper from a certain shop in six days.

Days	Mon	Tue	Wed	Thur	Fri	Sat
No. of	140	160		180	150	170
pcts sold						

- The total sales in that week was 940 packets. If each packet costs sh. 30, how much more money did he receive on Saturday than on Wednesday?
- A. sh. 900
 B. sh 600
 C. 1800
 D. sh 1200

42. Which of the following sets of measurements can be used to form a right angled triangle?
- A. 3 cm, 4 cm, 0.5 cm
 B. 5 cm, 12 cm, 13 cm
 C. 6 cm, 0.8 cm, 10 cm
 D. 10 cm, 2.4 cm, 26 cm

43. How many $1\frac{1}{4}$ kg packets can be obtained from 20kg?
- A. 80
 B. 20
 C. 25
 D. 16

44. Which of the following is not a quadrilateral?
- A. Trapezium
 B. Square
 C. Triangle
 D. Rectangle

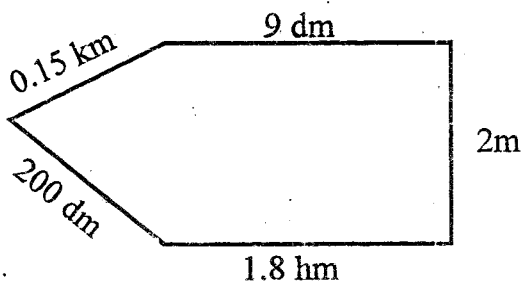
45. What is the next number in the sequence?
 2, 3, 5, 7, 11, ____
- A. 15
 B. 17
 C. 12
 D. 13

46. In Kipeto village, the number of women was 5394 while that of men was 532 less than women. If the children were 238 more than adults, how many people altogether were in that village?
- A. 20750
 B. 22348
 C. 18328
 D. 16967

47. Construct triangle MNP such that $MN = 7\text{cm}$, $NP = 5.5\text{ cm}$ and angle $MNP = 50^\circ$. Join P to M. Measure angle MPN.

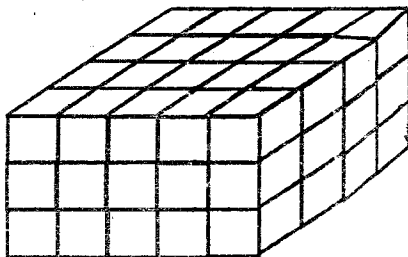
- A. 60°
- B. 50°
- C. 80°
- D. 70°

48. What is the perimeter of the figure below in metres?



- A. 280 m
- B. 440 m
- C. 212.95 m
- D. 442 m

49. How many cubes were used to make the stack below?



- A. 60
- B. 47
- C. 80
- D. 30

50. Which of the nets below can be folded to form an open cube?

