

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 the 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 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 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:

- 14.** What is the area of a circle whose radius is 28cm?

- A. ~~308~~cm²
 B. ~~464~~cm²
 C. 616cm²
 D. 1232m²

The correct answer is **B** (2464cm²)

On the answer sheet:

4 | A | B | C | D | **14** | A | B | C | D | **24** | A | B | C | D | **34** | A | B | C | D | **44** | A | B | C | D |

In the set of boxes numbered **14**, the box with the 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.

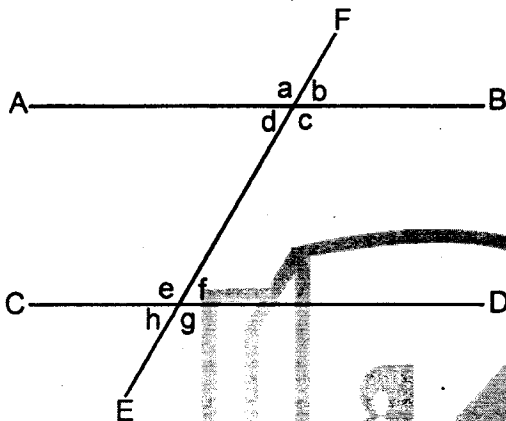
This question paper consists of 8 printed pages.

Candidates should check the question paper to ensure that all the pages are printed as indicated and no questions are missing.

1. Which number is eleven million eleven thousand and one?
 A. 11 011 001
 B. 11 110 110
 C. 11 101 011
 D. 11 011 110
2. What is 989.985 rounded of to the nearest two decimal places?
 A. 989.99
 B. 989.00
 C. 989.90
 D. 990.00
3. What is the G.C.D of 36, 48 and 72?
 A. 18
 B. 144
 C. 36
 D. 12
4. How many days are there from 1st January to 1st March of leap year?
 A. 60
 B. 59
 C. 61
 D. 58
5. Which is the correct order of arranging the fractions $\frac{2}{3}$, $\frac{5}{8}$, $\frac{3}{5}$ and $\frac{1}{3}$ from the smallest to the largest?
 A. $\frac{2}{3}$, $\frac{5}{8}$, $\frac{3}{5}$, $\frac{1}{3}$
 B. $\frac{1}{3}$, $\frac{3}{5}$, $\frac{5}{8}$, $\frac{2}{3}$
 C. $\frac{1}{3}$, $\frac{2}{3}$, $\frac{3}{5}$, $\frac{5}{8}$
 D. $\frac{5}{8}$, $\frac{3}{5}$, $\frac{2}{3}$, $\frac{1}{3}$
6. What is the value of $\frac{2}{3}$ of $\frac{1}{2} + \frac{1}{3} \times \frac{2}{3}$
 A. 1
 B. $\frac{5}{9}$
 C. $1\frac{2}{3}$
 D. $\frac{4}{9}$
7. Which of the following number is the square of $2\frac{1}{5}$?
 A. $4\frac{1}{25}$
 B. $\frac{121}{5}$
 C. $4\frac{21}{25}$
 D. $4\frac{20}{25}$
8. What is the total value of digit 3 in the product of 235 and 152?
 A. 35720
 B. 30000
 C. 3000
 D. 300000
9. What is the value of $\frac{2(5^2 - 3^2) - 5 \times 4 \div 2}{4 \div 2}$
 A. 11
 B. 22
 C. 33
 D. 5.5
10. A family uses 3- 500 ml in the month of July and August. How many litres did they consume?
 A. 91.5
 B. 90
 C. 88.5
 D. 93

11. Which of the following is the next number in the sequence 2, 3, 5, 8, 13, 21 _____
- A. 31
B. 33
C. 34
D. 29

12. In the diagram below line AB is parallel to line CD. Line EF



Which of the following statements is TRUE?

- A. Angle a is alternative to angle d.
B. Angle g is vertically opposite to angle e.
C. Angle e and angle d are angles of a straight line.
D. Angle f and angle d are cointerior angles.
13. A cylindrical water tank measures 1.4m in diameter and 1.0m high. How many litres does it hold when half full?
- A. 3000
B. 6160
C. 616
D. 1540
14. Three street lights light at an interval of 6 min, 8 min and 12 min. If they all started at 8:05am, at what time will they light together again?
- A. 8:29 am
B. 8:53 am
C. 9:29 am
D. 9:53 am

15. The area of a square is 676 cm^2 . What is twice its perimeter?
- A. 104 cm
B. 208 cm
C. 26 cm
D. 52 cm

16. The table below shows the time table for a bus from town A to town E?

Town	Arrival Time	Departure Time
A		8:00am
B	9:30	9:45 am
C	11:20	11:25am
D	1:15pm	1:30 pm
E	2:45pm	3:00 pm

How long does it take the bus to travel from town A to town D.

- A. $4\frac{1}{2}$
B. 3 hrs 15 min
C. $5\frac{1}{4}$
D. 4 hrs 15 min
17. Wangira paid sh 27 000 for a T.V set after getting 25% discount. How much was the marked price?
- A. Sh.20 250
B. Sh.9 000
C. Sh.6 750
D. Sh.36 000

18. Which of the following statements is TRUE about a trapezium.

- A. Has two pairs of parallel lines.
B. Diagonals bisect at right angle.
C. Has one pair of parallel lines.
D. Interior angles adds up to 180° .
19. A farmer harvested 3.5 tonnes of rice. He repacked the rice into 2.5kg. How many packets did he get?
- A. 140
B. 1 400
C. 14 000
D. 140 000

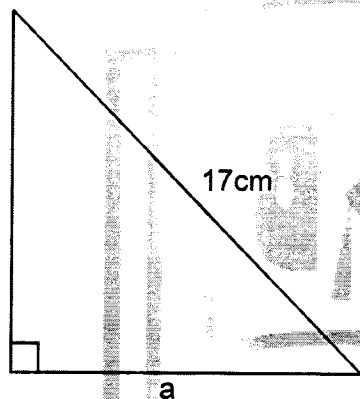
20. Ochieng sold goods worth sh 450 000 if he was given a 5% commission of all the sales, how much did he get?

- A. Sh.25000
- B. Sh.2500
- C. Sh.24500
- D. Sh.22500

21. Jane and Jackline shared some money in the ratio 3:4. If Jackline got sh 3 000 more than Jane. How much money were they sharing?

- A. Sh.1 200
- B. Sh.1 800
- C. Sh.2 100
- D. Sh.900

22. The figure below shows a right-angled triangle.



If the square of the side marked a is 64 cm^2 , what is the area of the triangle?

- A. 120 cm^2
- B. 1088 cm^2
- C. 544 cm^2
- D. 60 cm^2

23. A water tank was $\frac{3}{4}$ full of water. When 60 litres were drawn from it, it became $\frac{1}{2}$ full. What is the capacity of the tank?

- A. 120 litres
- B. 180 litres
- C. 240 litres
- D. 300 litres

24. A map is drawn to scale 1:40 000. What is the actual length of a road in Km represented by 6cm.

- A. 2 400
- B. 240
- C. 24
- D. 2.4

25. Okeyo bought the following items from a shop.

2 loaves of bread for sh.90.

$2\frac{1}{2}$ kg sugar @ sh.120

3-500ml packets of milk @ sh.60 per packet.

3 bars of soap @ sh 145.

How much balance did he get after paying sh.1200?

- A. Sh.1005
- B. Sh.195
- C. Sh.185
- D. Sh.1105

26. What is the value of

$$0.2(0.6 - 0.4) + 3.2 \times 0.2?$$

- A. 0.04
- B. 0.64
- C. 0.28
- D. 0.68

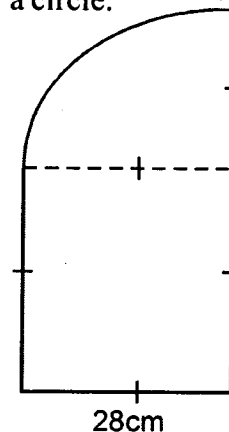
27. What is the value of x in $\frac{2x + 4}{3} - 4 = 8$?

- A. 16
- B. 32
- C. 64
- D. 8

28. A group of five pupils have a mean mass of 57 kg. If the first four weighs 48 kg, 53 kg, 63kg and 64 kg. What is the mass of the fifth boy?

- A. 57 kg
- B. 63kg
- C. 285 kg
- D. 47 kg

29. The diagram below shows a square joined to a quarter a circle.



What is the area of the figure above?

- A. 1400 cm^2
- B. 2016 cm^2
- C. 3248 cm^2
- D. 616 cm^2

30. When an item is sold for sh 1 850 a shopkeeper makes 7.5% loss. How much should he sell to make 15% profit?

- A. Sh 2 127.5
- B. Sh 2 600
- C. Sh 2 300
- D. Sh 2 350

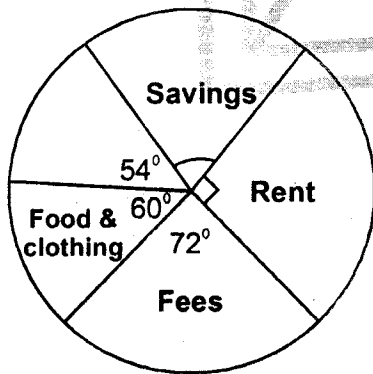
31. 8 workers take 24 hours to complete a certain job. How long would it take 12 workers?

- A. 8
- B. 32
- C. 24
- D. 16

32. Which of the following statement is **not true** about triangles?

- A. Base angles of an isosceles triangle are equal.
- B. Scalene triangles have two angles equal.
- C. Equilateral triangles have all sides equal.
- D. Two sides of a right angled triangle meet at 90° .

33. The pie chart below shows how Kasee spent his salary of sh 24 000.



How much did he spend on savings?

- A. Sh 4800
- B. Sh 5600
- C. Sh 4000
- D. Sh 3600

34. Wanjira bought x mangoes, y oranges and twice as much bananas as oranges and mangoes put together. How many fruits did she buy altogether?

- A. $3x + 3y$
- B. $2x + 2y$
- C. $2x + 3y$
- D. $3x + 2y$

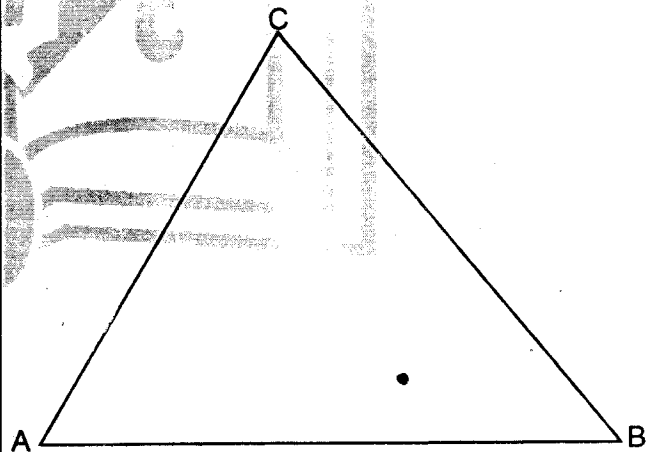
35. The table below shows the number of pupils enrolled in a certain constituency in five years.

Years	2015	2016	2017	2018	2019
No of pupils	2232	2637	2108	2962	2436

In which two consecutive years was the enrollment highest?

- A. 2018 and 2019
- B. 2016 and 2018
- C. 2016 and 2017
- D. 2015 and 2016

36. The triangle ABC below is drawn accurately.



What is the size of angle ABC?

- A. 60°
- B. 110°
- C. 50°
- D. 70°

37. A trapezium has its parallel sides measuring 11cm and 13cm. The perpendicular distance between them is 9cm. What is its area?

- A. 108 cm^2
- B. 96 cm^2
- C. 143 cm^2
- D. 126 cm^2

38. Construct a triangle ABC such that line AB=4cm BC=5 cm and AC=4cm. Draw a circle that touches points ABC. What is the length of the diameter of the circle?

- A. 8 cm
- B. 2.6 cm
- C. 10 cm
- D. 5.2 cm

39. Onesmus borrowed sh 200 000 from a bank that changed a simple interest at that rate of 4% per annum. How much interest did he pay after two years.

- A. Sh.8 000
- B. Sh.12 000
- C. Sh.16 000
- D. Sh.4000

40. What is the value of $\frac{2x+3y-z}{x}$?

If $x = 2$, $y = 3$ and $z = x + 2$

- A. $4\frac{1}{2}$
- B. $8\frac{1}{2}$
- C. 17
- D. $9\frac{1}{2}$

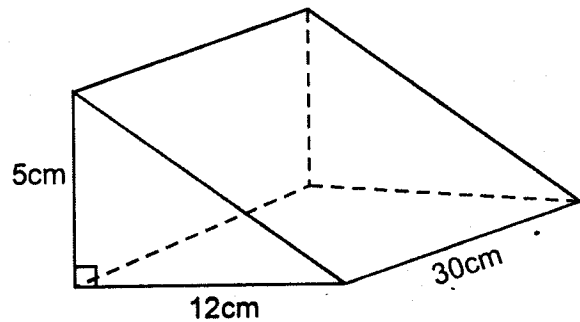
41. The hire purchase price of a generator is Sh.32 000. Ochieng paid Shs 8000 and paid the rest in equal monthly instalments for one year. How much was each instalment?

- A. Sh 24 000
- B. Sh 1000
- C. Sh 12 000
- D. Sh 2000

42. The bus fare from Kajjado to Isinya was increased from shs 100 to sh 125. What was the ration increase?

- A. 4:5
- B. 4:6
- C. 5:4
- D. 3:4

43. The figure below shows a triangular prism.



What is the surface area of the prism.

- A. 900 cm^2
- B. 960 cm^2
- C. 1020 cm^2
- D. 930 cm^2

44. The fractions $\frac{2}{3}, \frac{3}{4}, \frac{3}{8}, \frac{2}{5}$ are to be arranged in order from the smallest to the largest. Which is the correct order.

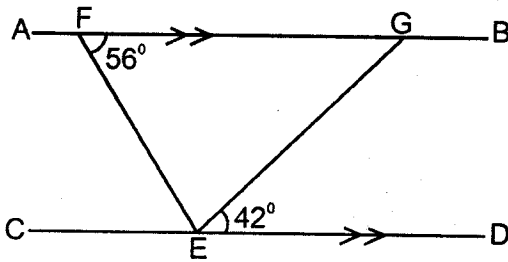
- A. $\frac{3}{8}, \frac{2}{5}, \frac{2}{3}, \frac{3}{4}$
- B. $\frac{3}{4}, \frac{2}{3}, \frac{2}{5}, \frac{3}{8}$
- C. $\frac{2}{3}, \frac{3}{4}, \frac{2}{5}, \frac{3}{8}$
- D. $\frac{3}{8}, \frac{2}{5}, \frac{3}{4}, \frac{2}{3}$

45. Karani travelled a distance of 216 km in 4 hrs. What was his speed in m/s?

- A. 20 m/s
- B. 18 m/s
- C. 15 m/s
- D. 30 m/s

46. How many days were there from 19th December 2015 to 20th March the following year?
- A. 90
 B. 91
 C. 92
 D. 93

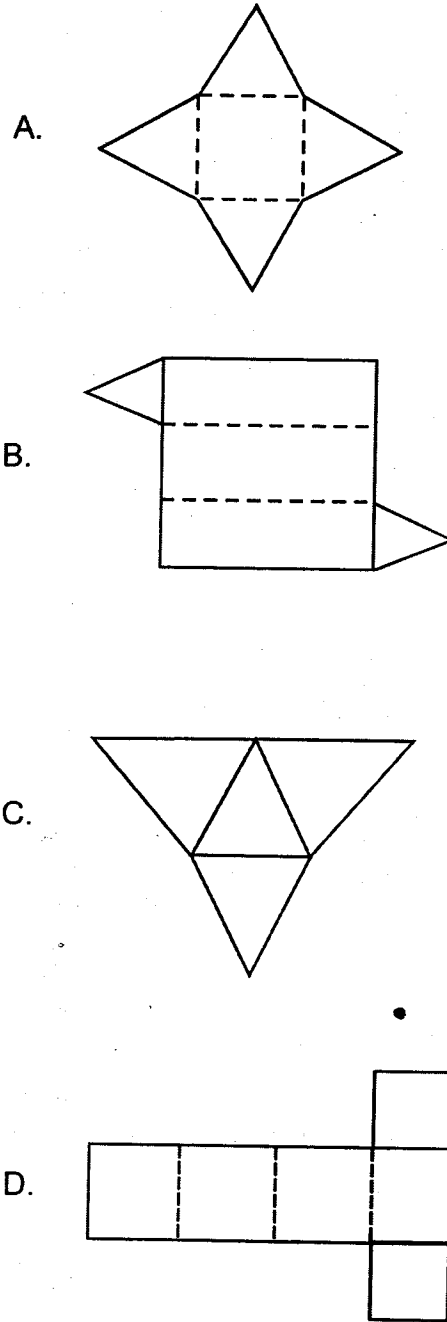
47. In the figure below line **AB** is parallel to line **CD**.



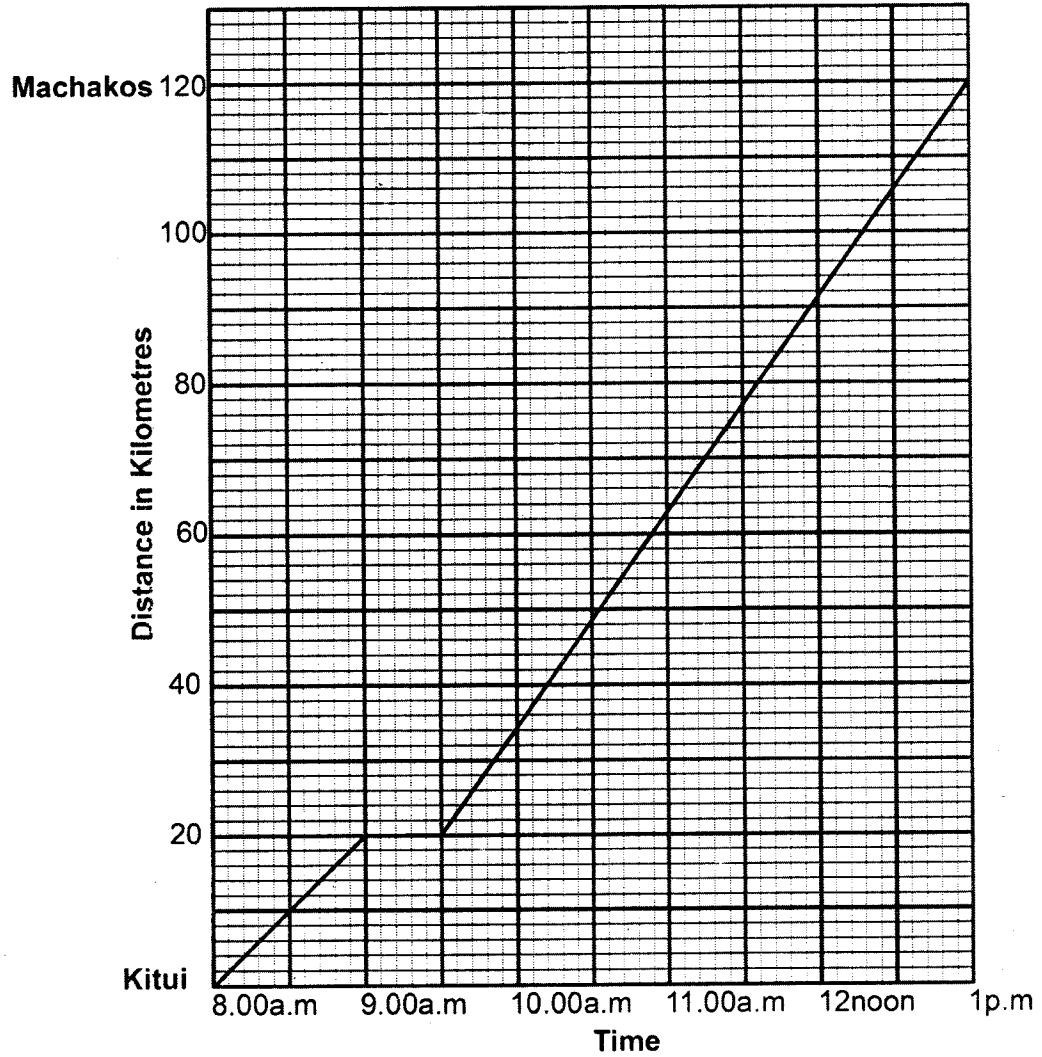
What is the size of angle **FEG**?

- A. 82°
 B. 42°
 C. 56°
 D. 92°
48. Which of the following represents the ratio 3:4 as a percentage?
- A. 130%
 B. 60%
 C. 75%
 D. 70%

49. Which of the following nets when folded to form a solid that will form a triangular prism?



50. The graph below shows Mumos journey from Kitui to Machakos at a distance of 120 km.



What was the average speed for the whole journey?

- A. 30km/h
- B. 60km/h
- C. 24km/h
- D. 120km/h